Finnish Maritime Administration

CIRCULAR No. 14/1.7.1996

SHIPBORNE RADIO EQUIPMENT

The Finnish Maritime Administration (FMA) has amended its Decision of 24 January 1992 on the Application of Section 3 of the Decree on Shipborne Radio Equipment (31/92). The amendments were adopted on 17 June 1996 and shall enter into force on 1 July 1996.

FMA's decisions of 23 January 1989 on arrangements equivalent to radiotelegraph stations on ships in world-wide trade and on ships engaged on voyages in the Baltic Sea, the North Sea and as far as the Irish Sea is still in force. These decisions have been published in FMA's Circular No 6/23.1.1989.

All ships shall be fitted with radio equipment complying with the requirements for the global maritime distress and safety system (GMDSS) not later than 1 February 1999. Referring to the recommendations of the International Maritime Organization (IMO) and its Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), the FMA urges all shipowners to provide their ships with radio equipment for use in the GMDSS well in advance of the said date, because suppliers may face difficulties in meeting the demand towards the end of the transitional period.

The Decree on Shipborne Radio Equipment (31/92) and FMA's Decision on the Application of Section 3 of the Decree, as amended, are published in this Circular. An outline of the GMDSS and the schedule for its introduction is appended.

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Contents

DECREE
ON SHIPBORNE RADIO EQUIPMENT (17.1.1992/31)

Passed in Helsinki on 17 January 1992

At the presentation of the Minister of Transport and Communications and by virtue of Section 8.2 of the Maritime Act of 9 June 1939 (167/39), as amended by law on 26 May 1967 (237/67), the following shall be enacted:

Section 1

A merchant ship registered in Finland shall be provided with radio equipment in accordance with the provisions below.

The radio equipment shall be type-approved or approved by the Telecommunications Administration Centre in accordance with the provisions of the Radio Act (517/88) and the Radio Decree (821/88).

Section 2

The radio equipment of a passenger ship engaged on international voyages and of a cargo ship of 300 gross tonnage or upwards engaged on international voyages shall comply with the provisions on radio equipment in the International Convention for the Safety of Life at Sea (SopS 11/81), as amended.

The Finnish Maritime Administration may, by request, after due deliberation with the Telecommunications Administration Centre, wholly or partly exempt a ship from the obligation to carry the radio equipment referred to in Subsection 1.

Section 3

The radio equipment of a cargo ship of less than 300 gross tonnage engaged on international voyages and of a ship engaged on domestic voyages shall comply with all applicable requirements for the global maritime distress and safety system (GMDSS). The Finnish Maritime Administration shall issue more specific instructions concerning the radio equipment of such ships with regard to the nature of the service and the sea area they are operating in.

Section 4

If the ship is constructed before 18 July 1994, the Finnish Maritime Administration may, at the owner's request, allow a tonnage defined in accordance with the Convention for a Uniform System of Tonnage Measurement of Ships (SopS 18/55) to be used as the ship's gross tonnage.

Section 5

The Telecommunications Administration Centre shall inspect and, by means of surveys, control the radio equipment of merchant ships and its operational availability.

Compliance with this Decree shall be supervised by the Finnish Maritime Administration, which shall also issue more specific rules and instructions on the application of the Decree.

Section 6

This Decree shall enter into force on 1 February 1992.

It shall repeal the Decree of 13 May 1966 on Ship Radio Stations (279/66), as amended.

FINNISH MARITIME ADMINISTRATION **REGULATION** **Date: 24.1.1992**
No: 1/30/92

Contents:	Radio equipment of cargo ships of less than 300 gross tonnage engaged on international voyages and of ships engaged on domestic voyages
Based on:	Decree on shipborne radio equipment, 17 January 1992 (31/92) Sections 3 and 5
Target groups:	Supervisory authorities, shipowners, and suppliers of radio equipment
Validity:	1 February 1992 - until further notice
Amendments:	Section 1, 'Mandatory Ship Documentation' and 'Schedule' of Annex I, and Annex II to Section 2 No 7/30/96, 17 June 1996 The amendments shall enter into force on 1 July 1996.

FINNISH MARITIME ADMINISTRATION DECISION ON THE APPLICATION OF SECTION 3 OF THE DECREE ON SHIPBORNE RADIO EQUIPMENT

Helsinki, 24 January 1992

By virtue of Sections 3 and 5 of the Decree of 17 January 1992 on Shipborne Radio Equipment (31/92), the Finnish Maritime Administration has decided as follows:

1. (Amended by Decision 7/30/96. 17 June 1996) A cargo ship of less than 300 gross tonnage, which is engaged on international voyages shall be provided with radio equipment in accordance with Annex I. The installations shall be operated, maintained and surveyed in accordance with the provisions of Annex I.

2. A ship engaged on domestic voyages shall be provided with radio equipment in accordance with Annex II. The installations shall be operated, maintained and surveyed in accordance with Annex II. (Annex II amended by Decision 7/30/96. 17 June 1996)

3. The Finnish Maritime Administration may, by request, grant a ship exemptions from the provisions of Sections 1 and 2.

4. This Decision shall enter into force on 1 February 1992.

Kyösti Vesterinen
Director General

Heikki Valkonen
Head of Maritime Safety Department

DECISION ON THE APPLICATION OF SECTION 3 OF THE DECREE ON SHIPBORNE RADIO EQUIPMENT 24 Jan. 1992, No 1/30/92

ANNEX I

CARGO SHIPS OF LESS THAN 300 GROSS TONNAGE ENGAGED ON INTERNATIONAL VOYAGES

Basic equipment

1 A VHF DSC radio installation, a dedicated DSC watchkeeping facility (channel 70), channel 16 and a sufficient number of channels for general radiocommunications;

2 a 406 MHz or 1.6 GHz EPIRB *) **);

3 a radar transponder (SART) **);

4 a NAVTEX receiver, if the ship is operating in an area in which NAVTEX service is provided. In other areas the ship must be capable of receiving warnings through INMARSAT EGC or HF NBDP;

5 two portable VHF radio apparatus with at least channel 16 and/or channels 15 and 17 for use in survival craft;

6 a 2,182 kHz watch receiver (WR) and a two-tone generator (TTG); and

7 a 9 GHz radar.

**) In sea area A1 this requirement may be fulfilled by a VHF EPIRB with a radar transponder. It can be taken into use in Finnish territorial waters as soon as the VHF DSC system becomes operative.

*) Not in sea area A4 (1.6 GHz).

Requirements for additional equipment by sea area

Sea area A1

The basic equipment is sufficient. A two-tone generator (TTG) is not required in sea area A1.

Sea area A2 (in addition to the basic equipment)

An MF DSC radio installation, a dedicated DSC watchkeeping facility on the frequency 2,187.5 kHz, the frequency 2,182 kHz and a sufficient number of frequencies for general radiocommunications.

Sea area A3 (in addition to the basic equipment)

ALTERNATIVE A

1 An INMARSAT SES (minimum requirement: telex communications) and

2 an MF DSC radio installation, a dedicated DSC watchkeeping facility on the frequency 2,187.5 kHz, the frequency 2,182 kHz and, in addition, the frequency 4,125 kHz for ship-to-aircraft communication.

ALTERNATIVE B

An MF/HF DSC radio installation, a dedicated DSC watchkeeping facility on the frequencies 2,187.5 kHz and 8,414.5 kHz and, simultaneously, on one of the frequencies 4,207.5, 6,312, 12,577 or 16,804.5 kHz (a scanning receiver may be used), the frequency 2,182 kHz and a sufficient number of frequencies for general radiocommunications.

Sea area A4 (in addition to the basic equipment)

An MF/HF DSC radio installation, a dedicated DSC watchkeeping facility on the frequencies 2,187.5 kHz and 8,414.5 kHz and, simultaneously, on one of the frequencies 4,207.5, 6,312, 12,577 or 16,804.5 kHz (a scanner may be used), the frequency 2,182 kHz and a sufficient number of frequencies for general radiocommunications.

Sources of energy

In the event of failure of the ship's main source of electrical power, the following equipment shall be operated by another source of power for a period of at least six hours:

1 the VHF DSC radio installation and the DSC watchkeeping facility;
2 the MF DSC radio installation and the DSC watchkeeping facility;
3 the MF/HF DSC radio installation and the DSC watchkeeping facility; and
4 the INMARSAT ship earth station (SES).

In addition, the following equipment until 1.2.1999:

the MF/2,182 kHz watchkeeping facility and the two-tone generator (TTG).

The source of electrical power shall be installed and stowed in such a location that malfunction (e.g. of the charger) does not make it inoperative and that, for instance, a fire in the engine room does not destroy it.

Watches

Every ship, while at sea, shall be capable of maintaining a continuous watch

1 on the DSC frequencies mentioned above and on VHF channel 70;
2 on the INMARSAT ship earth station (SES); and
3 on the NAVTEX, INMARSAT EGC or HF NBDP receiver.

Until 1 February 1999 a watch shall also be maintained on

1 VHF channel 16 and
2 MF frequency 2,182 kHz.

Ensuring the availability of the equipment

The availability of the equipment is ensured

1 by using duplication of specific apparatus or
2 by using shore-based maintenance (maintenance agreement).

A written announcement about the method chosen shall be submitted to the Finnish Maritime Administration.

Surveys

1 Initial survey (new radio installations)
2 Periodical survey
  .1 Ships with a valid maintenance agreement may be exempted from periodical surveys.
  .2 The radio installations of other ships shall be surveyed at intervals of two years (± 3 months).

Mandatory ship documentation (amended by Decision 7/30/96, 17 June 1996)

1 Radio licence;
2 Operator's certificate;
3 Radio log;
4 List of Call Signs etc. (ITU List VIIA);
5 List of Coast Stations (the list will include information on GMDSS coast stations as soon as Administrations inform ITU about them);
6 List of Ship Stations;
7 Manual for Maritime Mobile etc. (blue book)
8 Merchant Ship Search and Rescue Manual (MERSAR);
9 The 1988 amendments (GMDSS) to the 1974 SOLAS Convention; and
10 List of Radiodetermination and Special Service Stations (all ships engaged on international voyages).

Schedule (amended by Decision 7/30/96, 17 June 1996)

All ships:

1 The MF radio installation with two-tone generator (TTG) and the 2,182 kHz watch receiver;
2 The EPIRB, SART, NAVTEX (or duplicating equipment) and the portable radiotelephone apparatus for survival craft (VHF);
3 The 9 GHz radar and the SART;
4 The MF DSC equipment, MF/HF DSC equipment or INMARSAT SES, on ships constructed on or after 1 January 1996 before they are put in service, and on existing ships not later than 1 February 1999;
5 VHF DSC equipment, on ships constructed on or after 1 January 1997 before they are put in service, and on existing ships not later than 1 February 1999.

DECISION ON THE APPLICATION OF SECTION 3 OF THE DECREE ON SHIPBORNE RADIO EQUIPMENT 24 Jan. 1992, No 1/30/92

ANNEX II (amended by Decision 7/30/96, 17 June 1996)

SHIPS ENGAGED ON DOMESTIC VOAYGES

Trading area III

Basic equipment

1 A VHF DSC radio installation, a dedicated DSC watchkeeping facility (channel 70), channel 16 and a sufficient number of channels for general radio-communications;

2 a VHF EPIRB with a radar transponder (for use of this device, the VHF DSC system in the ship's trading area must be operative). In lieu of the VHF EPIRB, either a 406 MHz or a 1.6 GHz EPIRB and a SART may be used; and

3 two portable VHF radiotelephone apparatus with at least channel 16 and/or 15 and 17 for use in survival craft.

Watches

While at sea, the ship shall maintain a continuous watch on VHF DSC channel 70 and on VHF channel 16.

Sources of energy

In the event of failure of the ship's main source of electrical power, the following radio equipment shall be operated by another source of power for a period of at least two hours:

the VHF DSC radio installation and the watchkeeping facility.

The source of electrical power shall be installed and stowed in such a location that malfunction (of e.g. the charger) does not make it inoperative and that, for instance, a fire in the engine room does not destroy it.

Ensuring the availability of the equipment

The availability of the equipment is ensured

1 by using duplication of the VHF radio installation or by the EPIRB; or
2 by using shore-based maintenance (maintenance agreement).

A written announcement about the method chosen shall be submitted to the Finnish Maritime Administration.

Surveys

1 Initial survey (new radio installations)

2 Periodical survey
.1 Ships with a valid maintenance agreement may be exempted from periodical surveys;
.2 The radio installations of other ships are surveyed at intervals of four years (± 3 months).

Mandatory ship documentation

1 Radio licence;
2 Operator's certificate;
3 Radio log; and
4 List of Lights, Finland/Radio section.

Schedule

1 Existing ships shall be provided with equipment in accordance with the provisions above not later than 1 January 1997. They need not, however, comply with the requirement for VHF DSC until 1 February 1999.
2 New ships constructed on or after 1 January 1997 shall be provided with equipment in accordance with the above provisions before they are put in service.

Trading area II

Basic equipment

1 A VHF DSC radio installation, a dedicated DSC watchkeeping facility (channel 70), channel 16 and a sufficient number of channels for general radio-communications; and

2 two portable VHF radiotelephone apparatus with at least channel 16 and/or 15 and 17 for use in survival craft.

Watches

While at sea, the ship shall maintain a continuous watch on VHF DSC channel 70 and on VHF channel 16.

Sources of energy

In the event of failure of the ship's main source of electrical power, the following radio equipment shall be operated by another source of power for a period of at least one hour:

the VHF DSC radio installation and the watchkeeping facility.

The source of electrical power shall be installed and stowed in such a location that malfunction (of e.g. the charger) does not make it inoperative and that, for instance, a fire in the engine room does not destroy it.

Ensuring the availability of the equipment

The availability of the equipment is ensured

1 by using duplication of the VHF radio installation; or
2 by using shore-based maintenance (maintenance agreement).

A written announcement about the method chosen shall be submitted to the Finnish Maritime Administration.

Surveys

1 Initial survey (new radio installations);
2 Periodical survey
  .1 Ships with a valid maintenance agreement may be exempted from periodical surveys;
  .2 The radio installations of other ships are surveyed at intervals of four years (± 3 months).

Mandatory ship documentation

1 Radio licence;
2 Operator's certificate (ROC);
3 Radio log; and
4 List of Lights, Finland/Radio section.

Schedule

1 Ships shall forthwith be provided with a VHF radio installation, and, not later than 1 January 1997, with two portable radiotelephone apparatus for survival craft.
2 New ships constructed on or after 1 January 1997 shall, in addition, be provided with VHF DSC equipment and a DSC watchkeeping facility before they are put in service.
3 Existing ships shall be provided with VHF DSC equipment and a DSC watchkeeping facility not later than 1 February 1999.

<u>Trading area I</u> (applies to ships, excl. unmanned barges, of more than 15 m in length (as defined in the Tonnage Certificate))

Basic equipment

1 A VHF radio installation with channel 16 and a sufficient number of channels for general radiocommunications; and

2 two portable VHF radiotelephone apparatus with at least channel 16 and/or 15 and 17 for use in survival craft (applies to passenger ships only).

Watches

While at sea, the ship shall maintain a continuous watch on channel 16.

Sources of energy

In the event of failure of the ship's main source of electrical power, the following radio equipment shall be operated by another source of power for a period of at least one hour:

the VHF radio installation.

The source of electrical power shall be installed and stowed in such a location that malfunction (of e.g. the charger) does not make it inoperative and that, for instance, a fire in the engine room does not destroy it.

Ensuring the availability of the equipment

The availability of the equipment is ensured

1 by using duplication of the VHF radio installation; or
2 by using shore-based maintenance (maintenance agreement).

A written announcement about the method chosen shall be submitted to the Finnish Maritime Administration.

Surveys

1 Initial survey (new radio installations)
2 Periodical survey
  .1 Ships with a valid maintenance agreement may be exempted from periodical surveys;
  .2 The radio installations of other ships are surveyed at intervals of four years (± 3 months).

Mandatory ship documentation

1 Radio licence;
2 Operator's certificate (VHF); and
3 Radio log.

Schedule

1 The ships shall be provided with a VHF radio installation not later than 1 January 1997.
2 Passenger ships shall, in addition, be provided with two portable VHF radiotelephone apparatus not later than 1 January 1997.

INTRODUCTION OF THE GMDSS

Below is an outline of concepts relating to the GMDSS, of its introduction and schedule.

Sea areas/radio systems

Sea area A2 is an area within the radiotelephone coverage of at least one MF coast station in which continuous DSC alerting is available.

Sea area A1 is an area within the radiotelephone coverage of at least one VHF coast station in which continuous DSC alerting is available, if the height of the ship's aerial is 4 m. According to the IMO method of calculation this means a range of approximately 30 nautical miles, if the height of the earth aerial is 100 m.

Digital selective calls are transmitted in the form of digital pulses. Transition to voice communication takes place as soon as contact via DSC has been established. The distress and safety frequency on MF DSC is 2,187.5 kHz, on VHF DSC channel 70, which also serves as a calling channel. Within the MF frequency band, transition to voice communication takes place on 2,182 kHz, within the VHF frequency band on channel 16.

Schedule for DSC (Digital Selective Calling)

MF DSC: Sea area A2 was established on 1 January 1993. It covers the whole Baltic Sea.

VHF DSC and sea area A1: The Finnish Maritime Administration and Telecom Finland Oy/Radio Services concluded an agreement as to the establishment of sea area A1 (VHF/DSC) on 30 November 1994. Sea area A1 will cover the entire coast and will officially become operative on 1 January 1997. According to information received, Sweden will establish regional A1 areas both in the Stockholm area and in the Quark. The A1 area off Stockholm will be operative by the end of 1996 and the Quark area in 1997. Estonia has acknowledged its intention to introduce a VHF and VHF DSC system.

According to plan, the Finnish MF DSC and VHF DSC systems will provide distress and safety communication services only. Distress alerts will be relayed to the nearest MRCC. All safety communications will soon be taken over by FMA's own radio station (Turku Radio/Pärnäinen).

Distress communications in the Lake Saimaa District: The Finnish Maritime Administration has introduced a VHF distress and safety radio system in the Lake Saimaa District. Watch is maintained by Lappeenranta, Varkaus, Savonlinna and Joensuu regional emergency switchboards. Listening watches are maintained on channels 16 and 13. Plans have been made to set up additional dispatch centres at Kuopio, Koli and Ristiina.

Distress communications in the Lake Saimaa District consist of distress and safety communications only. Distress alerts are relayed to the nearest regional emergency switchboard.

Transition to GMDSS (SOLAS, transitional provision)

In accordance with the revised chapter IV of SOLAS (SopS 11/81), shipowners may choose

1 to fit all ships, irrespective of age, in compliance with the 1974 SOLAS Convention, or
2 to fit them so as to comply with all GMDSS requirements.

A satellite EPIRB and a NAVTEX receiver are mandatory for all ships operating within NAVTEX coverage as of 1 August 1993.

Ships constructed on or after 1 February 1995 shall comply with all GMDSS requirements.

A 9 GHz (3 cm) radar and radar transponder are mandatory on all convention ships as of 1 February 1995.

All ships shall comply with all GMDSS requirements not later than 1 February 1999.

All ships shall maintain a listening watch on VHF channel 16 and the MF frequency 2,182 kHz until 1 February 1999. The listening watch on the latter frequency is maintained by a dedicated watch receiver. Ships constructed after 1 February 1997 may be exempted from the listening watch on 2,182 kHz.

Schedule for Finnish ships

1 Passenger ships engaged on voyages in the Baltic Sea and passenger ships making cruises beyond the area of VHF coverage have already made the transition to GMDSS. Ships that are put in service within this trading area shall comply with the requirements of sea area A2.

2 Passenger ships engaged on voyages between Finland and Sweden or on international voyages within the area of VHF coverage in the Gulf of Finland shall be equipped as prescribed for GMDSS/sea area A1 before the date of the next survey. Ships engaged on voyages to Sweden in the Quark area shall be equipped as prescribed for GMDSS/sea area A1 by the time sea area A1 is established on the Swedish coast. Field strength measurements will be carried out for the purpose of studying the extent to which the Finnish sea area A1 covers the Estonian coast. If the results are positive enough, a decision will be made to equal operations between the ports concerned to operation in sea area A1.

3 The requirements of paragraph 2 apply to passenger ships engaged on voyages in the Gulf of Finland and between Finland and the Baltic countries. Ships operating in areas beyond VHF coverage shall comply with the requirements for sea area A2.

4 Cargo ships of 1600 gross tonnage or upwards which are engaged on international voyages shall comply with the requirements for GMDSS in their trading area.

With respect to ships referred to in paragraphs 1-4, shipowners may, as an alternative, choose radio equipment complying with the 1974 SOLAS Convention (the current system + a radio operator). Such ships shall, however, be provided with GMDSS equipment, as prescribed for ships in paragraph 5, not later than 1 February 1999. Ships constructed on or after 1 February 1995 shall comply with the GMDSS requirements before they are put in service.

5 The schedule prescribed by the revised chapter IV of the SOLAS Convention applies to cargo ships of 300 - 1599 gross tonnage engaged on international voyages. The Finnish Maritime Administration recommends that these ships are provided with MF DSC and VHF DSC equipment as soon as possible.

6 Cargo ships of less than 300 gross tonnage engaged on international voyages shall be provided with a MF transceiver with adherent equipment (not DSC) and, in addition, a two-tone generator and a 2,182 kHz watchkeeping facility. In all other respects, the schedule and recommendation of paragraph 5 apply.

7 Special Purpose Ships. These ships are treated individually with a view to whether the Code of Safety for Special Purpose Ships requires them to be fitted with radio equipment in accordance with SOLAS or not.

8 Ships engaged on domestic voyages within trading area III (within VHF coverage) shall, by 1 February 1997, be provided with a VHF radio installation and other equipment according to Section 3 of FMA's Decision on the Application of Section 3 of the Decree on Shipborne Radio Equipment. These ships and new ships constructed on or after 1 January 1997 shall, in addition, be provided with the GMDSS equipment (VHF DSC) required in sea area A1 not later than 1 February 1997. Ships constructed before 1 January 1997 shall be fitted with VHF DSC equipment by 1 February 1999.

Ships engaged on domestic voyages within trading area II shall forthwith be fitted with a VHF radio installation and, by 1 January 1997, with two portable VHF radiotelephone apparatus for survival craft. New ships constructed on or after 1 January 1997 shall, in addition, be fitted with VHF DSC equipment and a DSC watchkeeping facility prior to being put in service. Existing ships shall be fitted with VHF DSC equipment and a DSC watchkeeping facility not later than 1 February 1999.

A VHF radio installation is mandatory on ships of more than 15 m in length engaged on domestic voyages/trading area I as of 1 April 1996. The provision does not apply to unmanned barges. Passenger ships shall, in addition, be fitted with two portable radiotelephone apparatus. No other radio equipment is mandatory on these ships.

NB. Owing to EU directives, stricter requirements may, in the future, become applicable to radio equipment on passenger ships engaged on domestic voyages.

9 There are no specific requirements for radio equipment on hired boats. Hired boats engaged on international voyages are dealt with individually. Hired boats are also subject to the provisions of paragraph 10.

10 There are no special requirements for pleasure craft. At present, installation of radio equipment is voluntary. The listening watch maintained by Turku Radio and the MRCC/MRSCs on channel 16 is likely to be continued after 1 February 1999. Notwithstanding, the Finnish Maritime Administration recommends yachters and boaters to fit their craft with DSC equipment.

Qualifications of radio personnel

1 Every officer in charge of a watch on a passenger ship engaged on voyages in the Baltic Sea or on cruises beyond VHF coverage shall hold a General Operator's Certificate not later than 1 January 1997. For a number of years now,

the condition for granting exemptions to such ships has been that they carry two deck officers holding GOCs.

2 All officers in charge of a watch on a passenger ship engaged on voyages between Finland and Sweden shall hold GMDSS certificates not later than 1 January 1997. A Restricted Operator's Certificate is sufficient for officers who handle equipment used in sea area A1 only.

3 For the time being, the requirements of paragraph 2 also apply to passenger ships engaged on voyages in the Gulf of Finland and to the Baltic countries.

4 All officers in charge of a watch on a cargo ship that is both a convention ship and engaged on international voyages shall hold General Operator's Certificates not later than 1 January 1997.

5 One member of the crew on board a cargo ship of less than 300 gross tonnage engaged on international voyages shall hold a General Operator's Certificate not later than 1 January 1997.

6 The requirements set out in paragraphs 5 and 7 are applied to special purpose ships as appropriate.

7 One person on board a ship engaged on domestic voyages, a hired boat with a permanent crew or on a pleasure craft shall hold the certificate pertaining to the ship's radio equipment.

8 The former VHF Radiotelephone Operator's Certificate is still valid on unmanned hired boats and pleasure craft (also those fitted with DSC).

If the shipmaster is in charge of a watch, he shall hold a GOC or ROC as appropriate. All shipmasters shall hold GOCs/ROCs not later than 1 February 1999. The Finnish Maritime Administration may grant individual exemptions from the said qualification requirements.

GOC AND ROC CERTIFICATION IN FUTURE

A General Operator's Certificate is issued to a person who has attended a GOC course and passed a GOC examination. A certificate may also be issued solely on the basis of the examination.

The validity of the General Operator's Certificate is controlled at intervals of five years. The certificate remains valid, if the holder has approved sea-going service of not less than one year during the five-year period preceding the control. Otherwise a refresher course or examination is required.

The procedure described above applies to Restricted Operator's Certificates as well.

REPLACEMENT OF OLD GENERAL OPERATOR'S CERTIFICATES

In Finnish General Operator's Certificates issued before 31 October 1994 no reference is made to the GMDSS and to the European recommendation on GOC examinations. Owing to these deficiencies, authorities in a number of countries have requested further verification. The Telecommunications Administration Centre has therefore made a decision to revise the GOC form. A certificate of the old type, issued before 31 October 1994, may now be replaced by a new one free of charge.

Applications for new certificates should be addressed to Telehallintokeskus, Liikennejaosto/GOC, PL 53, 00211 Helsinki. An official passport photography, max. two years old, should be enclosed. A new certificate is sent by ordinary mail to the address stated in the application.

The old certificate need not be sent to the Telecommunications Administration Centre. The holder may invalidate it himself.

LISTENING WATCH ON CHANNEL 16 AFTER 1 FEBRUARY 1999

A listening watch on channel 16 will be maintained along the entire Finnish coast for an as yet undefined period after 1 February 1999. Since absolute certainty of a continued maintenance of the listening watch in all areas has not yet been had, the Finnish Maritime Administration recommends that all pleasure craft be fitted with DSC equipment.

FISHING VESSELS

Requirements for manning and structure/equipment (including radio equipment) of fishing vessels will be defined as soon as EU directives on fishing vessels enter into force.

NEW RADIO LOGS

New radio logs are obtainable from the Telecommunications Administration Centre/customer service:

phone (90) 696 65 00
fax (90) 696 64 10

and from the Finnish Maritime Administration:

phone (90) 180 82 14
fax (90) 180 83 55.

Instructions for use are given on the first pages of the log book. In special purpose ships, such as icebreakers, all additional information required by the shipowners or the ship's internal regulations shall be given. The new radio logs are mandatory on all ships provided with radio equipment. No other radio logs are in use/obtainable in Finland.

TONNAGE MEASUREMENT AND APPLICATION OF TONNAGE AFTER 1 FEBRUARY 1999

By virtue of Section 4 of the Decree on Shipborne Radio Equipment (31/929, the Finnish Maritime Administration may, at the owner's request, allow a tonnage defined in accordance with the Convention for a Uniform System of Tonnage Measurement of Ships (SopS 18/55) to be used as the gross tonnage of a ship constructed before 18 July 1994. This provision applies until 31 January 1999.

As of 1 February 1999 all ships engaged on international voyages shall have a tonnage defined in accordance with the International Convention on Tonnage Measurement of Ships, 1969 (SopS 31/82). By that time the GMDSS DSC system will be introduced all over the world and watchkeeping on current distress frequencies will be discontinued or maintained to a much lesser degree than today.

MUSTER LIST

The names of those who, in an emergency situation, shall place EPIRBs and SARTs in survival craft shall be entered in the ship's muster list.

FALSE DISTRESS ALERTS

In recent years, there has been a large number of false distress alerts, initiated by 406 MHz GMDSS EPIRBs, owing in part to a defect in the Norwegian earth station's software. Such false alerts have also been initiated by Finnish ships; almost invariably because of incorrect handling of the equipment. All officers are therefore urged to study the operating instructions carefully and to guide other crew members as to the proper methods of painting, flushing etc.

EPIRB lanyards must not be attached to the ship.

As soon as the batteries of the 121,5 (243) MHz EPIRBs (according to SOLAS/III/6.2.3 1983 amendment) reach the end of their lifetime, the EPIRBs should be disposed of (SOLAS III/6.1, 1988 amendment).

PROVISION OF RADAR TRANSPONDERS (SART)

Radar transponders are mandatory on ships engaged on international voyages as of 1 February 1995. In accordance with the transition regulation, passenger ships engaged on international voyages and cargo ships of 500 gross tonnage or upwards shall have two radar transponders, one on each side of the ship.

One SART is sufficient on cargo ships of less than 500 gross tonnage engaged on international voyages. The transponders may be kept on the navigation bridge close to the outer doors.

As of 1 February 1995 the said ships shall, in addition, be fitted with a 3 cm (9 GHz) radar.

RADIOMEDICAL

In accordance with an agreement concluded between the Finnish Maritime Administration and Telecom Finland Oy/Radio Services, radiomedical calls are relayed to Helsingin yliopistollinen keskussairaala (HYKS, Helsinki University Central Hospital), which can also be contacted by:

phone (90) 4711
fax (90) 471 5500
teletex 1002758.

Direct calls to the Poison Information Centre (8 a.m. - 10 p.m.):

phone (90) 414 392
fax (90) 471 4702.

Medical advice is also given by the Medi-Heli helicopter crew. A person calling the coast station should always indicate whom he/she would like to get in touch with. It is also possible to dial an ordinary addressed call. The phone numbers are:

(90) 441 144 or
(90) 827 5500.

The evacuation of ships in Finnish territorial waters should always be effected via the MRCC. The procedure is as follows:

Ships within the bounds of the Finnish search and rescue area shall request transportation via MRCC Turku, MRSC Helsinki or MRSC Vaasa). Direct contacts with Medi-Heli should be avoided because they can bring about confusion, ie. two helicopters might be sent off on the same mission.

TURKU RADIO

The Finnish Maritime Administration has established a radio station in Pärnäinen in the Turku archipelago. The station will take charge of safety communications, radiomedical and, if necessary, distress communications. The station will be equipped with MF, MF DSC, VHF and VHF DSC, which cover the entire coastline. It will work in co-operation with MRCC Turku and use Telecom Finland's base stations through remote control. The station will become fully operative on 1 January 1997.

ELECTROMAGNETIC INTERFERENCE OF SHIPBORNE RADIO EQUIPMENT

Shipborne radio equipment shall be tested in such a manner that other electric or electronic equipment etc. is switched on in order to ensure that the radio equipment does not cause unforeseen interference with the navigation of the ship. The test may easily be arranged, for instance, as a trial run and should always be carried out when pocketphones etc. have been procured. Account should be taken of the safe radiation protection distance stated by the manufacturer.

By Resolution A.813(19) the International Maritime Organization (IMO) has developed a recommendation on the electromagnetic compatibility for all electrical and electronic ship's equipment (Annex 1).

Casualty Information No 4/94, published by Det Norske Veritas, is a case history of electromagnetic interference (Annex 2).

COMPATIBILITY OF DSC EQUIPMENT WITH EXISTING EQUIPMENT

Existing marine VHF radiotelephone apparatus do not become outdated as far as radiotelephony is concerned. Technically it will not, however, be possible to combine DSC equipment with all models. Moreover, all VHF radiotelephone apparatus have not been approved for use in conjunction with DSC equipment.

Further particulars on marine VHF/DSC combinations complying with current requirements may be obtained from the Telecommunications Administration Centre.

FUTURE EVENTS AND CHANGES REQUIRED BY SOLAS CHAPTER IV AND V (Annex 3)

1 Convention ships, the keels of which have been laid on or after 1 February 1997 may be exempted from mandatory
.1 2,182 kHz watchkeeping facilities and
.2 2,182 kHz two-tone generators (TTG).

2 Existing passenger ships, the keels of which have been laid before 1 July 1997, shall comply with the following requirements at the date of the first periodical survey on or after 1 July 1997:

.1 A panel shall be installed at the conning position. It shall contain either one single button which, when pressed, initiates a distress alert using all radiocommunication installations required on board for that purpose or one button for each individual installation. The panel shall provide visual and aural indication of any distress alert or alerts received on board.

.2 If the satellite EPIRB (Record of Equipment/Form P, radio equipment, para. 2) is used as the secondary means of distress alerting and is not remotely activated, an additional EPIRB shall be installed in the wheelhouse near the conning position.

.3 Information on the ship's position shall be continuously and automatically provided to all relevant radiocommunication equipment from the ship's navigation equipment.

.4 The ship shall be provided with means for two-way on-scene radio-communications for search and rescue purposes using the aeronautical frequencies 121.5 MHz and 123.1 MHz from the position from which the ship is normally navigated. One person shall hold a certificate for aeronautical radio (certificate issued after attendance of a 2/3-day course at a Civil Aviation Institute etc.).

3 New passenger ships shall comply with the requirements of paragraphs 2.1, 2.2, 2.3 and 2.4. not later than 1 July 1997.

4 As of 1 July 1997 passenger ships which fulfil GMDSS requirements are not entitled to other exemptions than those referred to in regulation IV/3 of the SOLAS Convention.

5 All passenger ships shall carry at least one person qualified to have primary responsibility for distress communications not later than 1 July 1997.

6 All convention ships shall comply with the GMDSS requirements pertaining to their trading area not later than 1 February 1999.

7 All exemptions relating to radiocommunications and tonnage measurement shall expire on 31 January 1999.

TESTING OF GMDSS DSC EQUIPMENT

At its 37th session, the IMO COMSAR sub-committee finalized a recommendation on testing of MF DSC equipment either prior to entering harbour or prior to departure (COM/Circ.106, Annex 4). Testing during installation of DSC equipment has caused a series of false alerts. This has induced the Telecommunications Administration Centre to give instructions on testing of DSC equipment (Annex 5).

GMDSS DSC transmitters may be used only by persons who are GOC holders. This also goes for testing during installation of the equipment, if a transmitter is used.

Finnish ships shall carry out tests on their MF DSC equipment once a week prior to entering harbour or prior to departure. Testing should be done carefully and care should be taken that false alerts are not initiated. Com/Circ.127. Guidelines for Avoiding False Distress Alerts (Annex 6) will be implemented soon.

ANNEX 1

INTERNATIONAL MARITIME ORGANIZATION

IMO

A 19/Res.813
18 December 1995
Original: ENGLISH

ASSEMBLY
19th session
Agenda item 10

RESOLUTION A.813(19)
adopted on 23 November 1995

GENERAL REQUIREMENTS FOR ELECTROMAGNETIC COMPATIBILITY (EMC) FOR ALL ELECTRICAL AND ELECTRONIC SHIP'S EQUIPMENT

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety,

RECALLING ALSO resolution A.694(17), which requires that all reasonable and practical steps should be taken to ensure electromagnetic compatibility between the equipment concerned and other radiocommunication and navigational equipment carried on board in accordance with the relevant requirements of chapters IV and V of the International Convention for the Safety of Life at Sea (SOLAS), 1974,*

NOTING the growing number of problems experienced with equipment that is susceptible to electromagnetic interference, which can result in dangerous situations,

NOTING ALSO that some standards on electromagnetic compatibility have been developed,

RECOGNIZING the need to prepare standards on electromagnetic compatibility for all electrical and electronic ship's equipment to ensure the operational reliability and suitability of such equipment,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its sixty-fifth session,

INVITES Governments to ensure that all ship's electrical and electronic equipment is tested to the relevant electromagnetic compatibility standards.

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* IEC Publications 533 and 945.

ANNEX 2

CASUALTY INFORMATION

Published by Det Norske Veritas Classification AS

No 4/94 *Edited by DSO-245*

SHIP TYPE:Passenger ferry **SIZE (GRT)**: 35000 **YEAR OF BUILD**: 1989

ELECTROMAGNETIC INTERFERENCE

Course of Events:
Two incidents of double auxiliary engine shut down and subsequent blackout occurred while in shallow coastal waters. This in turn caused all main engines to stop.

Extent of Damage:
No damage was done, as the vessel, due to an element of luck and the skill of the bridge personnel, was able to steer clear of nearby obstacles even with no engine power. Hydraulic pressure for the steering gear was maintained by gas accumulators. The result could otherwise have been heavy grounding.

Probable Cause:
The reason for the double auxiliary engine shutdown was suspected to be electromagnetic interference from portable communication equipment transmitting from the engine room. Later tests confirmed the suspicion. The electromagnetic noise reacted with the crankcase oil mist detectors of both auxiliary engines, as new developments in the technology of communication equipment have seen carrier wave frequencies higher than those previously in use for such equipment. After the first of the two incidents, transmission from this kind of communication equipment while in the engine room was prohibited. However, users of the equipment were not aware that an automatic answering mode installed in the equipment, caused automatic transmission of a "received but not able to answer" signal with no intervention from the user of the equipment, when a call was directed. A second shutdown occurred shortly after and as a result, there is now a general prohibition on bringing such communication equipment into the engine room.

Lessons to be Learned:

- Portable communication equipment not previously used has to be tested on board during controlled conditions when loss of propulsion/steering action will not cause danger.
- In general, all equipment radiating electromagnetic signals shall be tested before being adopted for general use on board. This includes fixed and portable communication equipment and units containing microprocessors, among others.
- Electronic equipment crucial for navigation, propulsion and steering should preferably be type approved.
- The Type Approval process includes EMI testing including radiated and conducted electric/electronic noise.

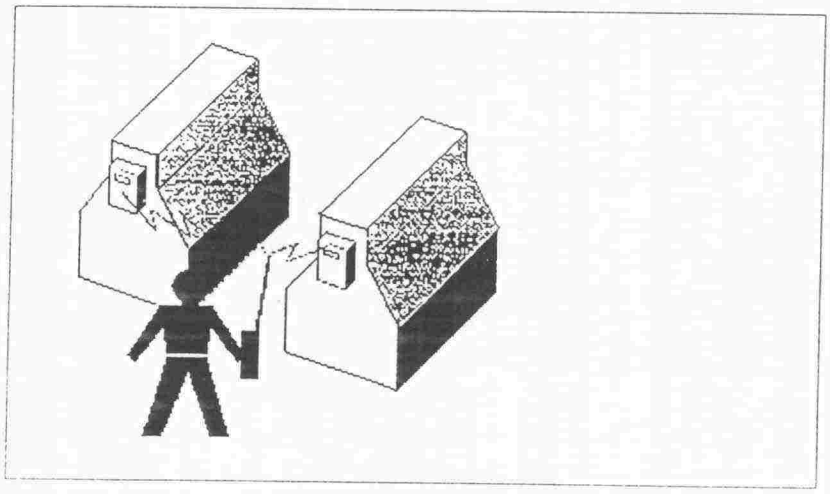

Fig. 1

ANNEX 3

INTERNATIONAL MARITIME ORGANIZATION

IMO

SOLAS/CONF.3/46
6 December 1995
Original: ENGLISH

CONFERENCE OF CONTRACTING GOVERNMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

Agenda items 6 and 7

CONSIDERATION AND ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

CONSIDERATION AND ADOPTION OF RESOLUTIONS AND RECOMMENDATIONS AND RELATED MATTERS

Conference resolution 1 and amendments to the 1974 SOLAS Convention annexed thereto and Conference resolutions 2 to 14

As adopted by the Conference

Attached in the annex are the texts of:

.1 Conference resolution 1 and amendments to the International Convention for the Safety of Life at Sea, 1974 annexed thereto, as set out in attachment 1 to the Final Act of the Conference : and

.2 Conference resolutions 2 to 14, as set out in attachment 2 to the Final Act of the Conference.

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ANNEX

ATTACHMENT 1 TO THE FINAL ACT OF THE CONFERENCE

RESOLUTION 1 OF THE CONFERENCE OF CONTRACTING GOVERNMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974 ADOPTED ON 29 NOVEMBER 1995

ADOPTION OF AMENDMENTS TO THE ANNEX TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

THE CONFERENCE,

RECALLING article VIII (c) of the International Convention for the Safety of Life at Sea, 1974 (hereinafter referred to as "the Convention") concerning the procedure for amending the Convention by a Conference of Contracting Governments,

NOTING resolution A.596(15) adopted by the Assembly of the International Maritime Organization (IMO), concerning the safety of ro-ro ships,

NOTING FURTHER resolutions MSC.11(55), MSC.12(56), MSC.24(60), MSC.26(60) and MSC.27(61) by which amendments to the Convention were adopted by the Maritime Safety Committee of IMO aimed at enhancing the safety of new and existing ro-ro passenger ships, as appropriate,

EXPRESSING ITS CONCERN that, since the adoption of the aforementioned amendments, a number of ro-ro passenger ships have been involved in casualties, one of which has resulted in severe loss of life,

RECOGNIZING the urgent need to further improve the safety standards in all aspects of the design, equipment and operation of ro-ro passenger ships to avoid recurrence of such casualties,

HAVING CONSIDERED amendments to the Annex to the Convention proposed and circulated to all Members of the International Maritime Organization and all Contracting Governments to the Convention,

1. **ADOPTS**, in accordance with article VIII(c)(ii) of the Convention, amendments to the Annex to the Convention the text of which is set out in the Annex to the present resolution;

2. **DETERMINES**, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 1997, unless, prior to this date, more than one third of Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. **INVITES** Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 1997 upon their acceptance in accordance with paragraph 2 above.

ANNEX

AMENDMENTS TO THE ANNEX TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

CHAPTER II-1

CONSTRUCTION - SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Regulation 1 - Application

1 In paragraph 3.2, the reference to "regulation 8.9" is replaced by "regulation 8-1".

Regulation 2 - Definitions

2 The following new paragraph 13 is added after the existing paragraph 12:

"13 *Ro-ro passenger ship* means a passenger ship with ro-ro cargo spaces or special category spaces as defined in regulation II-2/3."

Regulation 8 - Stability of passenger ships in damaged condition

3 In the text in the parenthesis following the title, the reference to "paragraph 9" is replaced by "regulation 8-1".

4 The existing paragraph 2.3.5 is deleted.

5 The following new sentence is added after the existing first sentence of paragraph 7.4:

"The determination of the ship's stability shall always be made by calculation".

6 Existing paragraph 9 is deleted.

7 The following new regulations 8-1 and 8-2 are added after existing regulation 8:

"Regulation 8-1

Stability of ro-ro passenger ships in damaged condition*

Ro-ro passenger ships constructed before 1 July 1997 shall comply with regulation 8, as amended by resolution MSC.12(56), not later than the date of the first periodical survey after the date of compliance

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* For the application of specific stability requirements to ro-ro passenger ships, refer to resolution 14 of the 1995 SOLAS Conference.

prescribed below, according to the value of A/Amax as defined in the annex of the Calculation procedure to assess the survivability characteristics of existing ro-ro passenger ships when using a simplified method based upon resolution A.265(VIII), developed by the Maritime Safety Committee at its fifty-ninth session in June 1991 (MSC/Circ.574).

Value of A/Amax	**Date of compliance**
less than 85%	1 October 1998
85% or more but less than 90%	1 October 2000
90% or more but less than 95%	1 October 2002
95% or more but less than 97.5%	1 October 2004
97.5% or more	1 October 2005

Regulation 8-2

Special requirements for ro-ro passenger ships carrying 400 persons or more

Notwithstanding the provisions of regulations 8 and 8-1:

.1 ro-ro passenger ships certified to carry 400 persons or more constructed on or after 1 July 1997 shall comply with the provisions of paragraph 2.3 of regulation 8, assuming the damage applied anywhere within the ship's length L; and

.2 ro-ro passenger ships certified to carry 400 persons or more constructed before 1 July 1997 shall comply with the requirements of subparagraph .1 not later than the date of the first periodical survey after the date of compliance prescribed in subparagraph .2.1, .2.2 or .2.3 which occurs the latest:

		Date of compliance
.2.1	**Value of A/Amax**	
	less than 85 %	1 October 1998
	85 % or more but less than 90 %	1 October 2000
	90 % or more but less than 95 %	1 October 2002
	95 % or more but less than 97.5%	1 October 2004
	97.5 % or more	1 October 2010
.2.2	**Number of persons permitted to be carried**	
	1500 or more	1 October 2002
	1000 or more but less than 1500	1 October 2006
	600 or more but less than 1000	1 October 2008
	400 or more but less than 600	1 October 2010
.2.3	**Age of the ship equal to or greater than**	20 years,

where the age of the ship means the time counted from the date on which the keel was laid or the date on which it was at a similar stage of construction or from the date on which the ship was converted to a ro-ro passenger ship.

Regulation 10 - Peak and machinery space bulkheads, shaft tunnels, etc., in passenger ships

8 The existing text of paragraphs 3 and 4 is replaced by the following:

"3 Where a long forward superstructure is fitted, the forepeak or collision bulkhead on all passenger ships shall be extended weathertight to the next full deck above the bulkhead deck. The extension shall be so arranged as to preclude the possibility of the bow door causing damage to it in the case of damage to, or detachment of, a bow door.

4 The extension required in paragraph 3 need not be fitted directly above the bulkhead below, provided that all parts of the extension are not located forward of the forward limit specified in paragraph 1 or paragraph 2. However, in ships constructed before 1 July 1997:

.1 where a sloping ramp forms part of the extension, the part of the extension, which is more than 2.3 m above the bulkhead deck, may extend no more than 1 m forward of the forward limits specified in paragraph 1 or paragraph 2; and

.2 where the existing ramp does not comply with the requirements for acceptance as an extension to the collision bulkhead and the position of the ramp prevents the siting of such extension within the limits specified in paragraph 1 or paragraph 2, the extension may be sited within a limited distance aft of the aft limit specified in paragraph 1 or paragraph 2. The limited distance aft should be no more than is necessary to ensure non interference with the ramp. The extension to the collision bulkhead shall open forward and comply with the requirements of paragraph 3 and shall be so arranged as to preclude the possibility of the ramp causing damage to it in the case of damage to, or detachment of, the ramp.

5 Ramps not meeting the above requirements shall be disregarded as an extension of the collision bulkhead.

6 In ships constructed before 1 July 1997, the requirements of paragraphs 3 and 4 shall apply not later than the date of the first periodical survey after 1 July 1997".

9 Existing paragraphs 5 and 6 are renumbered as paragraphs 7 and 8.

Regulation 15 - Openings in watertight bulkheads in passenger ships

10 The following new paragraph 6.5 is added after existing paragraph 6.4:

"6.5 In ships constructed before 1 February 1992, doors which do not comply with paragraphs 6.1 to 6.4 shall be closed before the voyage commences, and shall be kept closed during navigation; the time of opening such doors in port and of closing them before the ship leaves port shall be entered into the log-book."

Regulation 19 - Construction and initial tests of watertight decks, trunks, etc., in passenger ships and cargo ships

11 The following new paragraphs 2, 3 and 4 are added after existing paragraph 1:

"2 Where a ventilation trunk passing through a structure penetrates the bulkhead deck, the trunk shall be capable of withstanding the water pressure that may be present within the trunk, after having taken into account the maximum heel angle allowable during intermediate stages of flooding, in accordance with regulation 8.5.

3 Where all or part of the penetration of the bulkhead deck is on the main ro-ro deck, the trunk shall be capable of withstanding impact pressure due to internal water motions (sloshing) of water trapped on the ro-ro deck.

4 In ships constructed before 1 July 1997, the requirements of paragraph 2 shall apply not later than the date of the first periodical survey after 1 July 1997."

12 Existing paragraph 2 is renumbered as paragraph 5.

Regulation 20 - Watertight integrity of passenger ships above the margin line

13 The following new paragraph 3 is added after existing paragraph 2:

"3 In passenger ships constructed on or after 1 July 1997, the open end of air pipes terminating within a superstructure shall be at least 1 m above the waterline when the ship heels to an angle of 15°, or the maximum angle of heel during intermediate stages of flooding, as determined by direct calculation, whichever is the greater. Alternatively, air pipes from tanks other than oil tanks may discharge through the side of the superstructure. The provisions of this paragraph are without prejudice to the provisions of the International Convention on Load Lines in force."

14 The existing paragraphs 3 and 4 are renumbered as paragraphs 4 and 5.

15 The following new regulations 20-2 to 20-4 are added after existing regulation 20-1:

"Regulation 20-2

Watertight integrity from the ro-ro deck (bulkhead deck) to spaces below

1 In ro-ro passenger ships constructed on or after 1 July 1997:

.1 subject to the provisions of subparagraphs .2 and .3, all accesses that lead to spaces below the bulkhead deck shall have a lowest point which is not less than 2.5 m above the bulkhead deck;

.2 where vehicle ramps are installed to give access to spaces below the bulkhead deck, their openings shall be able to be closed weathertight to prevent ingress of water below, alarmed and indicated to the navigation bridge;

.3 the Administration may permit the fitting of particular accesses to spaces below the bulkhead deck provided they are necessary for the essential working of the ship, e.g. the movement of machinery and stores, subject to such accesses being made watertight, alarmed and indicated to the navigation bridge;

.4 the accesses referred to in subparagraphs .2 and .3 shall be closed before the ship leaves the berth on any voyage and shall remain closed until the ship is at its next berth;

.5 the master shall ensure that an effective system of supervision and reporting of the closing and opening of such accesses referred to in subparagraphs .2 and .3 is implemented; and

.6 the master shall ensure, before the ship leaves the berth on any voyage, that an entry in the log-book, as required by regulation 25, is made of the time of the last closing of the accesses referred to in subparagraphs .2 and .3.

2 In ro-ro passenger ships constructed before 1 July 1997:

.1 all accesses from the ro-ro deck that lead to spaces below the bulkhead deck shall be made weathertight and means shall be provided on the navigation bridge, indicating whether the access is open or closed;

.2 all such accesses shall be closed before the ship leaves the berth on any voyage and shall remain closed until the ship is at its next berth;

.3 notwithstanding the requirements of subparagraph .2, the Administration may permit some accesses to be opened during the voyage but only for a period sufficient to permit through passage and, if required, for the essential working of the ship; and

.4 the requirements of subparagraph .1 shall apply not later than the date of the first periodical survey after 1 July 1997.

Regulation 20-3

Access to ro-ro decks

In all ro-ro passenger ships, the master or the designated officer shall ensure that, without the expressed consent of the master or the designated officer, no passengers are allowed access to an enclosed ro-ro deck when the ship is underway.

Regulation 20-4

Closure of bulkheads on the ro-ro deck

1 All transverse or longitudinal bulkheads which are taken into account as effective to confine the seawater accumulated on the ro-ro deck shall be in place and secured before the ship leaves the berth and remain in place and secured until the ship is at its next berth.

2 Notwithstanding the requirements of paragraph 1, the Administration may permit some accesses within such bulkheads to be opened during the voyage but only for sufficient time to permit through passage and, if required, for the essential working of the ship."

Regulation 23-2 - Integrity of the hull and superstructure, damage prevention and control

16 The existing text of regulation 23-2 is replaced by the following:

"(This regulation applies to all ro-ro passenger ships, except that for ships constructed before 1 July 1997, paragraph 2 shall apply not later than the date of the first periodical survey after 1 July 1997)

1 Indicators shall be provided on the navigation bridge for all shell doors, loading doors and other closing appliances which, if left open or not properly secured, could, in the opinion of the Administration, lead to flooding of a special category space or ro-ro cargo space. The indicator system shall be designed on the fail-safe principle and shall show by visual alarms if the door is not fully closed or if any of the securing arrangements are not in place and fully locked and by audible alarms if such door or closing appliances become open or the securing arrangements become unsecured. The indicator panel on the navigation bridge shall be equipped with a mode selection function "harbour/sea voyage" so arranged that an audible alarm is given on the navigation bridge if the ship leaves harbour with the bow doors, inner doors, stern ramp or any other side shell doors not closed or any closing device not in the correct position. The power supply for the indicator system shall be independent of the power supply for operating and securing the doors. The indicator systems, approved by the Administration, which were installed on ships constructed before 1 July 1997 need not be changed.

2 Television surveillance and a water leakage detection system shall be arranged to provide an indication to the navigation bridge and to the engine control station of any leakage through inner and outer bow doors, stern doors or any other shell doors which could lead to flooding of special category spaces or ro-ro cargo spaces.

3 Special category spaces and ro-ro cargo spaces shall be continuously patrolled or monitored by effective means, such as television surveillance, so that any movement of vehicles in adverse weather conditions and unauthorized access by passengers thereto can be detected whilst the ship is underway.

4 Documented operating procedures for closing and securing all shell doors, loading doors and other closing appliances which, if left open or not properly secured, could, in the opinion of the Administration, lead to flooding of a special category space or ro-ro cargo space, shall be kept on board and posted at an appropriate place."

Regulation 45 - Precautions against shock, fire and other hazards of electrical origin

17 The following new sentence is added after the existing first sentence of paragraph 5.3:

"In ro-ro passenger ships, cabling for emergency alarms and public address systems installed on or after 1 July 1998 shall be approved by the Administration having regard to the recommendations developed by the Organization[1]."

CHAPTER II-2

CONSTRUCTION - FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

Regulation 3 - Definitions

18 The following new paragraph 34 is added after existing paragraph 33:

"34 *Ro-ro passenger ship* means a passenger ship with ro-ro cargo spaces or special category spaces as defined in this regulation."

19 The following new regulation 28-1 is added after existing regulation 28:

"Regulation 28-1

Escape routes on ro-ro passenger ships

1 Requirements applicable to all ro-ro passenger ships

1.1 This paragraph shall apply to all ro-ro passenger ships. For ships constructed before 1 July 1997 the requirements of the regulation shall apply not later than the date of the first periodical survey after 1 July 1997.

1.2 Handrails or other handholds shall be provided in all corridors along the entire escape route, so that a firm handhold is available every step of the way, where possible, to the assembly stations and embarkation stations. Such handrails shall be provided on both sides of longitudinal corridors more than 1.8 m in width and transverse corridors more than 1 m in width. Particular attention shall be paid to the need to be able to cross lobbies, atriums and other large open spaces along escape routes. Handrails and other handholds shall be of such strength as to withstand a distributed horizontal load of 750 N/m applied in the direction of the centre of the corridor or space, and a distributed vertical load of 750 N/m applied in the downward direction. The two loads need not be applied simultaneously.

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[1] Refer to the recommendations for cabling for emergency alarms and public address systems to be developed by the Organization.

1.3 Escape routes shall not be obstructed by furniture and other obstructions. With the exception of tables and chairs which may be cleared to provide open space, cabinets and other heavy furnishings in public spaces and along escape routes shall be secured in place to prevent shifting if the ship rolls or lists. Floor coverings shall also be secured in place. When the ship is underway, escape routes shall be kept clear of obstructions such as cleaning carts, bedding, luggage and boxes of goods.

1.4 Escape routes shall be provided from every normally occupied space on the ship to an assembly station. These escape routes shall be arranged so as to provide the most direct route possible to the assembly station, and shall be marked with symbols in accordance with the recommendations of the Organization.[2]

1.5 Where enclosed spaces adjoin an open deck, openings from the enclosed space to the open deck shall, where practicable, be capable of being used as an emergency exit.

1.6 Decks shall be sequentially numbered, starting with "1" at the tank top or lowest deck. These numbers shall be prominently displayed at stair landings and lift lobbies. Decks may also be named, but the deck number shall always be displayed with the name.

1.7 Simple "mimic" plans showing the "you are here" position and escape routes marked by arrows, shall be prominently displayed on the inside of each cabin door and in public spaces. The plan shall show the directions of escape, and shall be properly oriented in relation to its position on the ship.

1.8 Cabin and stateroom doors shall not require keys to unlock them from inside the room. Neither shall there be any doors along any designed escape route which require keys to unlock them when moving in the direction of escape.

2 Requirements applicable to ro-ro passenger ships constructed on or after 1 July 1997

2.1 The lowest 0.5 m of bulkheads and other partitions forming vertical divisions along escape routes shall be able to sustain a load of 750 N/m to allow them to be used as walking surfaces from the side of the escape route with the ship at large angles of heel.

2.2 The escape route from cabins to stairway enclosures shall be as direct as possible, with a minimum number of changes in direction. It shall not be necessary to cross from one side of the ship to the other to reach an escape route. It shall not be necessary to climb more than two decks up or down in order to reach an assembly station or open deck from any passenger space.

2.3 External routes shall be provided from open decks, referred to in paragraph 2.2, to the survival craft embarkation stations.

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2 Refer to Symbols related to life-saving appliances and arrangements, adopted by the Organization by resolution A.760(18).

3 Requirements applicable to ro-ro passenger ships constructed on or after 1 July 1999

For ro-ro passenger ships constructed on or after 1 July 1999, escape routes shall be evaluated by an evacuation analysis early in the design process. The analysis shall be used to identify and eliminate, as far as practicable, congestion which may develop during an abandonment, due to normal movement of passengers and crew along escape routes, including the possibility that crew may need to move along these routes in a direction opposite the movement of passengers. In addition, the analysis shall be used to demonstrate that escape arrangements are sufficiently flexible to provide for the possibility that certain escape routes, assembly stations, embarkation stations or survival craft may not be available as a result of a casualty.

Regulation 37 - Protection of special category spaces

20 Existing paragraph 2.1 is renumbered as paragraph 2.1.1.

21 The following new paragraph 2.1.2 is added after the renumbered paragraph 2.1.1:

"2.1.2 Discharges

2.1.2.1 In all ro-ro passenger ships discharge valves for scuppers, fitted with positive means of closing operable from a position above the bulkhead deck in accordance with the requirements of the International Convention on Load Lines in force, shall be kept open while the ships are at sea.

2.1.2.2 Any operation of the valves referred to in paragraph 2.1.2.1 shall be recorded in the log-book."

CHAPTER III

LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Regulation 3 - Definitions

22 The following new paragraph 19 is added after existing paragraph 18:

"19 *Ro-ro passenger ship* means a passenger ship with ro-ro cargo spaces or special category spaces as defined in regulation II-2/3."

Regulation 6 - Communications

23 The following new paragraph 5 is added after existing paragraph 4:

"5 Public address systems on passenger ships

5.1 In addition to the requirements of regulation II-2/40.5 or regulation II-2/41-2, as appropriate, and of paragraph 4.2, all passenger ships shall be fitted with a public address system. With respect to passenger ships constructed before 1 July 1997 the requirements of paragraphs 5.2, 5.3 and 5.5, subject to the provisions of paragraph 5.6, shall apply not later than the date of the first periodical survey after 1 July 1997.

5.2 The public address system shall be one complete system consisting of a loudspeaker installation which enables simultaneous broadcast of messages to all spaces where crew members or passengers, or both, are normally present and to assembly stations. The public address system shall provide for the broadcast of messages from the navigation bridge and such other places on board as the Administration deems necessary.

5.3 The public address system shall be protected against unauthorized use and be clearly audible above the ambient noise in all spaces, prescribed by paragraph 5.2, and shall be provided with an override function controlled from one location on the navigation bridge and such other places on board as the Administration deems necessary, so that all emergency messages will be broadcast if any loudspeaker in the spaces concerned has been switched off, its volume has been turned down or the public address system is used for other purposes.

5.4 On passenger ships constructed on or after 1 July 1997:

.1 the public address system shall have at least two loops which shall be sufficiently separated throughout their length and have two separate and independent amplifiers; and

.2 the public address system and its performance standards shall be approved by the Administration having regard to the recommendations adopted by the Organization.[3, 4]

5.5 The public address system shall be connected to the emergency source of power.

5.6 Ships constructed before 1 July 1997 which are already fitted with the public address system approved by the Administration which comply substantially with those required by paragraph 5.2, 5.3 and 5.5 are not required to change their system.

24 The following new regulations 24-1 to 24-4 are added after existing regulation 24:

"Regulation 24-1

Requirements for ro-ro passenger ships

1 This regulation applies to all ro-ro passenger ships. Ro-ro passenger ships constructed:

.1 on or after 1 July 1998 shall comply with the requirements of paragraphs 2.3, 2.4, 3.1, 3.2, 3.3, 4 and 5;

.2 on or after 1 July 1986 and before 1 July 1998 shall comply with paragraph 5 not later than the first periodical survey after 1 July 1998 and with paragraphs 2.3, 2.4, 3 and 4 not later than the first periodical survey after 1 July 2000; and

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[3] Refer to the Code on Alarms and Indicators, 1995, adopted by the Organization by resolution A.830(19).

[4] Refer to performance standards for public address systems, to be developed by the Organization.

.3 before 1 July 1986 shall comply with paragraph 5 not later than the first periodical survey after 1 July 1998 and with paragraphs 2.1, 2.2, 2.3, 2.4, 3 and 4 not later than the first periodical survey after 1 July 2000.

2 Liferafts

2.1 The ro-ro passenger ship's liferafts shall be served by marine evacuation systems complying with regulation 48.5 or launching appliances complying with regulation 48.6, equally distributed on each side of the ship.

2.2 Every liferaft on ro-ro passenger ships shall be provided with float-free stowage arrangements complying with the requirements of regulation 23.

2.3 Every liferaft on ro-ro passenger ships shall be of a type fitted with a boarding ramp complying with the requirements of regulation 39.4.1 or regulation 40.4.1, as appropriate.

2.4 Every liferaft on ro-ro passenger ships shall either be automatically self-righting or be a canopied reversible liferaft which is stable in a seaway and is capable of operating safely whichever way up it is floating. Alternatively, the ship shall carry automatically self-righting liferafts or canopied reversible liferafts, in addition to its normal complement of liferafts, of such aggregate capacity as will accommodate at least 50% of the persons not accommodated in lifeboats. This additional liferaft capacity shall be determined on the basis of the difference between the total number of persons on board and the number of persons accommodated in lifeboats. Every such liferaft shall be approved by the Administration having regard to the recommendations adopted by the Organization.[5]

3 Fast rescue boats

3.1 At least one of the rescue boats on a ro-ro passenger ship shall be a fast rescue boat approved by the Administration having regard to the recommendations adopted by the Organization.[6]

3.2 Each fast rescue boat shall be served by a suitable launching appliance approved by the Administration. When approving such launching appliances, the Administration shall take into account that the fast rescue boat is intended to be launched and retrieved even under severe adverse weather conditions, and also shall have regard to the recommendations adopted by the Organization.[7]

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5 Refer to the requirements for automatically self-righting liferafts and canopied reversible liferafts, to be developed by the Organization.

6 Refer to the Guidelines for fast rescue boats, adopted by the Organization by resolution A.656(16). (To be reviewed and revised taking into account the recommendations of the Nordic group).

7 Refer to recommendations to be adopted by the Organization.

3.3 At least two crews of each fast rescue boat shall be trained and drilled regularly having regard to the Seafarers' Training, Certification and Watchkeeping (STCW) Code and recommendations adopted by the Organization,[8] including all aspects of rescue, handling, manoeuvring, operating these craft in various conditions, and righting them after capsize.

3.4 In the case where the arrangement or size of a ro-ro passenger ship, constructed before 1 July 1997, is such as to prevent the installation of the fast rescue boat required by paragraph 3.1, the fast rescue boat may be installed in place of an existing lifeboat which is accepted as a rescue boat or, in the case of ships constructed prior to 1 July 1986, boats for use in an emergency, provided that all of the following conditions are met:

.1 the fast rescue boat installed is served by a launching appliance complying with the provisions of paragraph 3.2;

.2 the capacity of the survival craft lost by the above substitution is compensated by the installation of liferafts capable of carrying at least an equal number of persons served by the lifeboat replaced; and

.3 such liferafts are served by the existing launching appliances or marine evacuation systems.

4 Means of rescue

4.1 Each ro-ro passenger ship shall be equipped with efficient means for rapidly recovering survivors from the water and transferring survivors from rescue units or survival craft to the ship.

4.2 The means of transfer of survivors to the ship may be part of a marine evacuation system, or may be part of a system designed for rescue purposes.

4.3 If the slide of a marine evacuation system is intended to provide the means of transfer of survivors to the deck of the ship, the slide shall be equipped with handlines or ladders to aid in climbing up the slide.

5 Lifejackets

5.1 Notwithstanding the requirements of regulations 7.2 and 21.2, a sufficient number of lifejackets shall be stowed in the vicinity of the assembly stations so that passengers do not have to return to their cabins to collect their lifejackets.

5.2 In ro-ro passenger ships, each lifejacket shall be fitted with a light complying with the requirements of regulation 32.3.

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[8] Refer to the Recommendation on training requirements for crews of fast rescue boats, adopted by the Organization by resolution A.771(18) and section A-VI/2, table A-VI/2-2 "Specification of the minimum standard of competence in fast rescue boats" of the Seafarers' Training, Certification and Watchkeeping (STCW) Code.

Regulation 24-2

Information on passengers

1 All persons on board passenger ships shall be counted prior to departure.

2 Details of persons who have declared a need for special care or assistance in emergency situations shall be recorded and communicated to the master prior to departure.

3 In addition, not later than 1 January 1999, the names and gender of all persons on board, distinguishing between adults, children and infants shall be recorded for search and rescue purposes.

4 The information required by paragraphs 1, 2 and 3 shall be kept ashore and made readily available to search and rescue services when needed.

5 Administrations may exempt passenger ships from the requirements of paragraph 3, if the scheduled voyages of such ships render it impracticable for them to prepare such records.

Regulation 24-3

Helicopter landing and pick-up areas

1 All ro-ro passenger ships, shall be provided with a helicopter pick-up area approved by the Administration having regard to the recommendations adopted by the Organization.[9]

2 Ro-ro passenger ships constructed before 1 July 1997 shall comply with the requirements of paragraph 1 not later than the date of the first periodical survey after 1 July 1997.

3 Passenger ships of 130 m in length and upwards, constructed on or after 1 July 1999, shall be fitted with a helicopter landing area approved by the Administration having regard to the recommendations adopted by the Organization. [10]

Regulation 24-4

Decision-support system for masters of passenger ships

1 This regulation applies to all passenger ships. Passenger ships constructed before 1 July 1997 shall comply with the requirements of this regulation not later than the date of the first periodical survey after 1 July 1999.

2 In all passenger ships, a decision-support system for emergency management shall be provided on the navigation bridge.

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9 Refer to the Merchant Ship Search and Rescue Manual (MERSAR), adopted by the Organization by resolution A.229(VII), as amended.

10 Refer to recommendations to be developed by the Organization.

3 The system shall, as a minimum, consist of a printed emergency plan or plans.[11] All foreseeable emergency situations shall be identified in the emergency plan or plans, including but not limited to, the following main groups of emergencies:

.1 fire;
.2 damage to ship;
.3 pollution;
.4 unlawful acts threatening the safety of the ship and the security of its passengers and crew;
.5 personnel accidents;
.6 cargo-related accidents; and
.7 emergency assistance to other ships.

4 The emergency procedures established in the emergency plan or plans shall provide decision support to masters for handling any combination of emergency situations.

5 The emergency plan or plans shall have a uniform structure and be easy to use. Where applicable, the actual loading condition as calculated for the passenger ship's voyage stability shall be used for damage control purposes.

6 In addition to the printed emergency plan or plans, the Administration may also accept the use of a computer-based decision-support system on the navigation bridge which provides all the information contained in the emergency plan or plans, procedures, checklists, etc., which is able to present a list of recommended actions to be carried out in foreseeable emergencies."

CHAPTER IV

RADIOCOMMUNICATIONS

Regulation 1 - Application

25 In paragraph 5, the reference to "paragraph 4" is replaced by "paragraphs 4 and 7".

26 At the end of paragraph 5.1.2, after the existing date "1992", the phrase "; however, passenger ships irrespective of size shall not be granted any exemption from the requirements of regulation 3 of chapter IV of that Convention" is added.

27 The following new paragraph 7 is added after existing paragraph 6:

"7 Passenger ships constructed before 1 July 1997 shall, as appropriate, comply with the requirements of regulations 6.4, 6.5, 6.6 and 7.5 not later than the date of the first periodical survey after 1 July 1997."

28 Existing paragraph 7 is renumbered as paragraph 8.

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[11] Refer to the International Safety Management (ISM) Code, chapter 8 and the guidelines for a structure of an integrated system for shipboard emergency plans scheduled to be finalized in 1996.

Regulation 6 - Radio installations

29 The following new paragraphs 4, 5 and 6 are added after existing paragraph 3:

"4 In passenger ships, a distress panel shall be installed at the conning position. This panel shall contain either one single button which, when pressed, initiates a distress alert using all radiocommunication installations required on board for that purpose or one button for each individual installation. The panel shall clearly and visually indicate whenever any button or buttons have been pressed. Means shall be provided to prevent inadvertent activation of the button or buttons. If the satellite EPIRB is used as the secondary means of distress alerting and is not remotely activated, it shall be acceptable to have an additional EPIRB installed in the wheelhouse near the conning position.

5 In passenger ships, information on the ship's position shall be continuously and automatically provided to all relevant radiocommunication equipment to be included in the initial distress alert when the button or buttons on the distress panel is pressed.

6 In passenger ships, a distress alarm panel shall be installed at the conning position. The distress alarm panel shall provide visual and aural indication of any distress alert or alerts received on board and shall also indicate through which radiocommunication service the distress alerts have been received."

Regulation 7 - Radio equipment: General

30 The following new paragraph 5 is added after existing paragraph 4:

"5 Every passenger ship shall be provided with means for two-way on-scene radiocommunications for search and rescue purposes using the aeronautical frequencies 121.5 MHz and 123.1 MHz from the position from which the ship is normally navigated."

Regulation 16 - Radio personnel

31 The existing paragraph is numbered as paragraph 1.

32 The following new paragraph 2 is added after the renumbered paragraph 1:

"2 In passenger ships, at least one person qualified in accordance with paragraph 1 shall be assigned to perform only radiocommunication duties during distress incidents."

CHAPTER V

SAFETY OF NAVIGATION

Regulation 10 - Distress messages: Obligations and procedures

33 The existing text of paragraphs (a) to (d) is replaced by the following:

"(a) The master of a ship at sea which is in a position to be able to provide assistance, on receiving a signal from any source that persons are in distress at sea, is bound to proceed with all speed to their assistance, if possible informing them or the search and rescue service, that the ship is doing so. If the ship receiving the distress alert is unable or, in the special circumstances of the case, considers it unreasonable or unnecessary to proceed to their assistance, the master must enter in the log-book the reason for failing to proceed to the assistance of the persons in distress and, taking into account the recommendations of the Organization,[12] inform the appropriate search and rescue service accordingly.

(b) The master of a ship in distress or the search and rescue service concerned, after consultation, so far as may be possible, with the masters of ships which answer the distress alert, has the right to requisition one or more of those ships such as the master of the ship in distress or the search and rescue service considers best able to render assistance, and it shall be the duty of the master or masters of the ship or ships so requisitioned to comply with the requisition by continuing to proceed with all speed to the assistance of persons in distress.

(c) Masters of ships shall be released from the obligation imposed by paragraph (a) of this regulation on learning that their ships have not been requisitioned and that one or more other ships have been requisitioned and are complying with the requisition. This decision shall, if possible, be communicated to the other requisitioned ships and to the search and rescue service.

(d) The master of a ship shall be released from the obligation imposed by paragraph (a) of this regulation, and, if the ship has been requisitioned, from the obligation imposed by paragraph (b) of this regulation, on being informed by the persons in distress or by the search and rescue service or by the master of another ship which has reached such persons that assistance is no longer necessary."

34 The following new regulation 10-1 is added after existing regulation 10:

"Regulation 10-1

Master's discretion for safe navigation

The master shall not be constrained by the shipowner, charterer or any other person from taking any decision which, in the professional judgement of the master, is necessary for safe navigation, in particular in severe weather and in heavy seas."

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12 Refer to the immediate action to be taken by each ship on receipt of a distress message in the Merchant Ship Search and Rescue Manual (MERSAR), as it may be amended.

Regulation 13 - Manning

35 The following new paragraph (c) is added after existing paragraph (b):

"(c) On every passenger ship to which chapter I applies, to ensure effective crew performance in safety matters, a working language shall be established and recorded in the ship's log-book. The company[13] or the master, as appropriate, shall determine the appropriate working language. Each seafarer shall be required to understand and, where appropriate, give orders and instructions and to report back in that language. If the working language is not an official language of the State whose flag the ship is entitled to fly, all plans and lists required to be posted shall include a translation into the working language".

Regulation 15 - Search and rescue

36 The following new paragraph (c) is added after existing paragraph (b):

"(c) Passenger ships to which chapter I applies, trading on fixed routes, shall have on board a plan for co-operation with appropriate search and rescue services in event of an emergency. The plan shall be developed in co-operation between the ship and the search and rescue services and be approved by the Administration. The plan shall include provisions for periodic exercises to be undertaken as agreed by the passenger ship and the search and rescue services concerned to test its effectiveness".

37 The following new regulation 23 is added after existing regulation 22:

"Regulation 23

Operational limitations

(This regulation applies to all passenger ships to which chapter I applies)

1 On passenger ships constructed before 1 July 1997, the requirements of this regulation shall apply not later than the date of the first periodical survey after 1 July 1997.

2 A list of all limitations on the operation of a passenger ship including exemptions from any of these regulations, restrictions in operating areas, weather restrictions, sea state restrictions, restrictions in permissible loads, trim, speed and any other limitations, whether imposed by the Administration or established during the design or the building stages, shall be compiled before the passenger ship is put in service. The list, together with any necessary explanations, shall be documented in a form acceptable to the Administration, which shall be kept on board readily available to the master. The list shall be kept updated. If the language used is not English or French, the list shall be provided in one of the two languages."

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13 *Company* means the owner of the ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the owner of the ship and who, on assuming such responsibility, has agreed to take over all the duties and responsibilities imposed by the International Safety Management (ISM) Code.

CHAPTER VI

CARRIAGE OF CARGOES

Regulation 5 - Stowage and securing

38 The following new paragraph 6 is added after existing paragraph 5:

"6 Cargo units, including vehicles and containers, shall be loaded, stowed and secured throughout the voyage in accordance with the Cargo Securing Manual approved by the Administration. In ships with ro-ro cargo spaces, as defined in regulation II-2/3.14, all securing of cargo units, in accordance with the Cargo Securing Manual, shall be completed before the ship leaves the berth. The Cargo Securing Manual shall be drawn up to a standard at least equivalent to the guidelines developed by the Organization.[14]"

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14 Refer to the guidelines to be developed by the Organization.

ATTACHMENT 2 TO THE FINAL ACT OF THE CONFERENCE

RESOLUTION 2

FIRE-EXTINGUISHING ARRANGEMENTS IN MACHINERY SPACES OF PASSENGER SHIPS

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

BEING OF THE OPINION that the safety of passenger ships would be improved if their machinery spaces were equipped with automatic local extinguishing systems in areas presenting high fire risk, in addition to the installed main fire-extinguishing system,

NOTING that the issue is already in the work programme of the Maritime Safety Committee of the International Maritime Organization (IMO),

1. **URGES** the Maritime Safety Committee of IMO to expedite its work relating to automatic local extinguishing systems;

2. **INVITES** Contracting Governments to encourage the installation of such automatic local extinguishing systems in machinery spaces of passenger ships in areas presenting high fire risk, in addition to the installed main fire-extinguishing system, pending adoption by IMO of the relevant amendments to the 1974 SOLAS Convention.

RESOLUTION 3

ESCAPE ARRANGEMENTS IN SHIPS CONSTRUCTED BEFORE 1 JULY 1997

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

NOTING that, in accordance with new SOLAS regulation II-2/28-1, ships constructed on or after 1 July 1997 are required to have bulkheads and other partitions forming vertical divisions along escape routes arranged in such a way as to allow them to be used as walking surfaces at large angles of heel,

BEING OF THE OPINION that the safety of passengers on ro-ro passenger ships constructed before 1 July 1997 should be improved by arranging escape routes in such a way that passengers could escape at large angles of heel,

RECOGNIZING that implementation of the fire protection requirements of the 1992 SOLAS amendments may entail modifications to the accommodation spaces of passenger ships,

URGES Contracting Governments to ensure that, when ro-ro passenger ships constructed before 1 July 1997 undergo modifications to the accommodation spaces, consideration is given to the fitting thereon of bulkheads and partitions of the standard prescribed in SOLAS regulation II-2/28-1.

RESOLUTION 4

MAXIMUM EVACUATION TIME FOR NEW RO-RO PASSENGER SHIPS

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

CONSIDERING new SOLAS regulation II-2/28-1.3 regarding requirements for an evacuation analysis,

BEING OF THE OPINION that there is need for an evacuation time to be specified within which the evacuation of a ro-ro passenger ship should be completed,

NOTING that it has been proposed that the maximum evacuation time of a ro-ro passenger ship should be 60 minutes,

URGES the Maritime Safety Committee of the International Maritime Organization to consider the maximum evacuation time for ro-ro passenger ships and develop requirements or recommendations, as appropriate.

RESOLUTION 5

AMENDMENTS TO CHAPTER III OF THE 1974 SOLAS CONVENTION

THE CONFERENCE,

HAVING ADOPTED amendments to chapter III of the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

NOTING that the Maritime Safety Committee (MSC) of the International Maritime Organization (IMO), at its sixty-fifth session, approved proposed amendments to chapter III of the 1974 SOLAS Convention with a view to their adoption at its sixty-sixth session,

RECOGNIZING the necessity of incorporating the amendments to SOLAS chapter III adopted by this Conference in the text of amendments to be considered by the sixty-sixth session of the MSC with a view to adoption,

REQUESTS the Secretary-General to convey to MSC 66 the text of amendments to SOLAS chapter III adopted by the Conference with a view to their incorporation in the revised chapter III.

RESOLUTION 6

LOW-POWERED RADIO HOMING DEVICES FOR LIFERAFTS ON RO-RO PASSENGER SHIPS

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

NOTING that a low-powered radio homing device for liferafts is intended to operate on a maritime VHF frequency or a UHF frequency and that such an international frequency or frequencies must first be allocated by an International Telecommunication Union (ITU) World Administrative Radio Conference and that the ITU Radiocommunication Bureau will have to develop technical standards for such radio equipment on the basis of operational requirements which the International Maritime Organization (IMO) has yet to prepare,

NOTING FURTHER that this procedure will take some time,

BEING OF THE OPINION that such a low-powered radio homing device for liferafts would greatly assist Search and Rescue (SAR) operations following a ro-ro passenger ship casualty,

1. **INVITES** the Maritime Safety Committee of IMO to:

   (a) develop, as a matter of urgency, operational requirements and performance standards for low-powered radio homing devices for liferafts; and

   (b) consider adopting amendments to the SOLAS Convention requiring carriage of low-powered radio homing devices for liferafts on all ro-ro passenger ships, at the earliest opportunity;

2. **INVITES** IMO, in co-operation with ITU, as a matter of priority, to:

   (a) develop technical standards for low-powered radio homing devices for liferafts; and

   (b) ensure the allocation of suitable radio frequencies for low-powered radio homing devices for liferafts.

RESOLUTION 7

DEVELOPMENT OF REQUIREMENTS, GUIDELINES AND PERFORMANCE STANDARDS

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

NOTING that a number of the adopted requirements concerning carriage of equipment require such equipment to take account of, or conform to, requirements, guidelines or performance standards adopted by the International Maritime Organization (IMO) which have yet to be developed,

BEING OF THE OPINION that the performance standards referred to above should be developed to enable manufacturers to develop suitable equipment and ships to fit the equipment before the amendments to the SOLAS Convention, adopted by the Conference, enter into force,

REQUESTS the Maritime Safety Committee of IMO to develop as a matter of urgency:

(a) performance standards for public address systems (regulation III/6.5.4);

(b) requirements for automatically self-righting liferafts and canopied reversible liferafts (regulation III/24-1.2.4);

(c) revised guidelines for fast rescue boats (regulation III/24-1.3.1);

(d) requirements for launching appliances for fast rescue boats (regulation III/24-1.3.2); and

(e) guidelines for helicopter landing and pick-up areas (regulation III/24-3).

RESOLUTION 8

DISTRESS MESSAGES: OBLIGATIONS AND PROCEDURES

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

CONSIDERING new SOLAS regulation V/10(a) which requires that, if the ship receiving the distress alert is unable or, in the special circumstances of the case, considers it unreasonable or unnecessary to proceed to the assistance of persons in distress, the master thereof must, taking into account the recommendations of the International Maritime Organization (IMO), inform the appropriate search and rescue service accordingly,

NOTING that the recommendations referred to above have to be developed by IMO for use by all seafarers,

BEING OF THE OPINION that the said recommendations should be adopted as amendments to the Merchant Ship Search and Rescue (MERSAR) Manual prior to entry into force of the relevant 1995 SOLAS amendments,

1. **REQUESTS** the Maritime Safety Committee of IMO to prepare and adopt as a matter of urgency amendments to the MERSAR Manual recommending the procedure to be followed by ships receiving a distress alert and failing to proceed to the assistance of persons in distress when it is unreasonable to expect them to do so;

2. **INVITES** Contracting Governments to take steps to ensure that such amendments to the MERSAR Manual are adopted with the minimum delay.

RESOLUTION 9

AUTOMATIC SHIP IDENTIFICATION TRANSPONDER/TRANSCEIVER SYSTEMS

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

BEING OF THE OPINION that the safety of navigation would be considerably improved if all ships above a certain size were fitted with ship identification transponder/transceiver systems capable of automatically providing shore stations and other ships with information as to the ship's identity, type, position, course, speed, navigational status and other safety-related information and to receive such information from similarly-fitted ships,

NOTING that the Maritime Safety Committee of the International Maritime Organization (IMO) is conducting a complete review of SOLAS chapter V - Safety of navigation, and is preparing carriage requirements and performance standards for shipborne automatic ship identification transponders,

NOTING FURTHER that automatic ship identification transponder/transceiver systems require the allocation of suitable radio frequencies and development of technical standards for the equipment concerned by the International Telecommunication Union (ITU),

1. **INVITES** the Maritime Safety Committee of IMO to:

   (a) develop, as a matter of urgency, operational requirements and performance standards for automatic ship identification transponder/transceiver systems; and

   (b) consider adopting amendments to the SOLAS Convention concerning carriage requirements for such automatic ship transponder/transceiver systems;

2. **INVITES** IMO, in co-operation with ITU, as a matter of priority, to:

   (a) develop technical standards for automatic ship identification transponder/transceiver systems; and

   (b) ensure the allocation of suitable radio frequencies for automatic ship identification transponder/transceiver systems.

RESOLUTION 10

ESTABLISHMENT OF WORKING LANGUAGES ON SHIPS

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

CONSIDERING new SOLAS regulation V/13(c), which requires that, on every passenger ship to which SOLAS chapter I applies, a working language should be established to ensure effective crew performance in safety matters,

NOTING ALSO that the International Safety Management (ISM) Code, adopted by the Assembly of the International Maritime Organization by resolution A.741(18), prescribes that shipping companies should ensure that ships personnel are able to communicate effectively in the execution of their duties related to the safety management system of their ships,

BEING OF THE OPINION that it would be desirable that the requirements of SOLAS regulation V/13(c) should apply to all ships, whether on international voyages or not,

URGES Contracting Governments to take steps to ensure that a working language is established on all their ships by implementing, as far as practicable, regulation V/13(c).

RESOLUTION 11

OPERATIONAL LIMITATIONS ON PASSENGER SHIPS

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

CONSIDERING that new SOLAS regulation V/23 requires that a list of all limitations on the operation of passenger ships to which SOLAS chapter I applies should be kept on board so as to be readily available to the master,

BEING OF THE OPINION that it would be desirable that, where operational limitations on a passenger ship exist, a list of all limitations on the operation of the ship should be kept on board and updated, when necessary, regardless of whether the passenger ship is engaged on international voyages or not,

URGES Contracting Governments to ensure that lists of all operational limitations are maintained on board and kept up-to-date on all their passenger ships so as to be readily available for the information of the master.

RESOLUTION 12

VOYAGE DATA RECORDERS

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

NOTING that operational requirements and performance standards are under consideration by the International Maritime Organization (IMO) but have yet to be prepared,

BEING OF THE OPINION that it would be desirable that ships, in particular passenger ships, are fitted with a voyage data recorder to assist in investigations into casualties,

1. **REQUESTS** the Maritime Safety Committee of IMO to:

   (a) develop, as a matter of urgency, operational requirements and performance standards for voyage data recorders, taking into account any potential human element implications; and

   (b) consider developing carriage requirements for voyage data recorders for inclusion in SOLAS, at the earliest opportunity;

2. **URGES** Contracting Governments to encourage the use of voyage data recorders on ships under their flags on an experimental basis in order to gain experience in their use.

RESOLUTION 13

CARGO SECURING EQUIPMENT

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

NOTING that SOLAS chapter VI requires cargo units, including containers, to be loaded, stowed and secured throughout the voyage in accordance with a Cargo Securing Manual approved by the Administration,

NOTING FURTHER that the Maritime Safety Committee of the International Maritime Organization (IMO) is developing provisions to be included in the Cargo Securing Manual required by SOLAS chapter VI,

BEING OF THE OPINION that cargo units, including vehicles and containers on ro-ro ships, should be secured using equipment of adequate strength, under all conditions including heeling,

URGES the Maritime Safety Committee of IMO to include, in the provisions to be included in the Cargo Securing Manual, minimum strength requirements for equipment used for securing cargo units, including vehicles and containers on ro-ro ships, taking into account forces due to the motion of the ship, angle of heel after damage or flooding and other considerations relevant to the strength of the cargo securing arrangements.

RESOLUTION 14

REGIONAL AGREEMENTS ON SPECIFIC STABILITY REQUIREMENTS FOR RO-RO PASSENGER SHIPS

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning the safety of ro-ro passenger ships,

CONSIDERING new SOLAS regulation II-1/8-1 by which every ro-ro passenger ship shall comply with regulation II-1/8, as amended by resolution MSC.12(56), in the future,

RECALLING the provisions of article VII of the SOLAS Convention,

ACKNOWLEDGING the desire of certain Contracting Governments that, having regard to the prevailing sea conditions and other local conditions, specific stability requirements should apply to all ro-ro passenger ships undertaking regular scheduled voyages between designated ports of those Contracting Governments,

1. **AGREES** that two or more Contracting Governments may conclude agreements modifying the requirements of regulation II-1/8-1 in respect of every ro-ro passenger ship carrying passengers on regular scheduled voyages between designated ports in their territory, provided that these ships comply with safety requirements which are adequate in the opinion of these Governments for the voyages to be undertaken;

2. **AGREES ALSO** that, if these safety requirements include specific stability requirements, they should not exceed those specified in the Annex to the present resolution;

3. **DECIDES** that Contracting Governments proposing an agreement shall notify the Secretary-General of the International Maritime Organization of their intention to negotiate an agreement and shall make appropriate arrangements for other interested Contracting Governments to be involved in the negotiations. When notifying the Secretary-General of their intention to negotiate an agreement, and on the concluding of an agreement, the Contracting Governments involved shall communicate to the Secretary-General all relevant particulars relating to it for circulation to all Contracting Governments. An agreement shall not enter into force until 12 months after its conclusion has been notified to the Secretary-General;

4. **URGES** all Contracting Governments to apply the provisions of such agreements on ro-ro passenger ships entitled to fly their flags when engaged on regular scheduled voyages between designated ports covered by such agreements.

ANNEX

STABILITY REQUIREMENTS PERTAINING TO THE AGREEMENT

1 In addition to the requirements of SOLAS regulation II-1/8, ro-ro passenger ships shall comply, subject to the provisions of paragraph 2, if applicable, with the following:

.1 the provisions of paragraph 2.3 of regulation 8 shall be complied with when taking into account the effect of a hypothetical volume of seawater which is assumed to have accumulated, subject to the provisions of paragraph 3, on the first deck above the designed waterline of the ro-ro cargo space or special category space as defined in SOLAS regulation II-2/3 assumed to be damaged (referred to as "the damaged ro-ro deck" hereinafter). The other requirements of regulation 8 need not be complied with in the application of these requirements. The volume of assumed accumulated seawater shall be kept the same at all trim and heeling angles, and shall be calculated with the following distribution density assuming that it were spread over the damaged ro-ro deck in the ship's upright position:

0.5 m^3/m^2, if the residual freeboard (fr) is 0.3 m or less;

0.0 m^3/m^2, if the residual freeboard (fr) is 2 m or more; and

intermediate values to be determined by linear interpolation, if the residual freeboard (fr) is 0.3 m or more but less than 2 m,

where the residual freeboard (fr) is the minimum distance between the damaged ro-ro deck and the final waterline at the location of the damage in the damage case being considered without taking into account the effect of the volume of assumed accumulated seawater on the damaged ro-ro deck;

.2 when a high-efficiency drainage system is installed, the Administration may allow a reduction of the distribution density of the volume of assumed accumulated seawater in accordance with the guidelines developed by the Organization;[15]

.3 for ships in geographically defined restricted areas of operation, the Administration may reduce the distribution density representing the volume of assumed accumulated seawater determined in accordance with subparagraph .1 substituting such distribution density by the following:

.3.1 0.0 m^3/m^2, if the significant wave height (hs) defining the area concerned is 1.5 m or less;

.3.2 the value determined in accordance with subparagraph .1, if the significant wave height (hs) defining the area concerned is 4 m or above;

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15 Refer to the guidelines to be developed by the Organization.

.3.3 intermediate values to be determined by linear interpolation, if the significant wave height (hs) defining the area concerned is 1.5 m or more but less than 4 m;

provided that the following conditions are fulfilled:

.3.4 the Administration is satisfied that the defined area is represented by the significant wave height (hs) which is not exceeded with a probability of more than 10%; and

.3.5 the area of operation and, if applicable, the part of the year for which a certain value of the significant wave height (hs) has been established are entered into the certificates;

.4 as an alternative to the requirements of subparagraph .1 or subparagraph .3, the Administration may exempt application of the requirements of subparagraph .1 or subparagraph .3 and accept proof, established by model tests carried out for an individual ship in accordance with the model test method developed by the Organization,[16] justifying that the ship will not capsize with the assumed extent of damage as provided in paragraph 4 of regulation 8 in the worst location being considered under paragraph 1.1 in an irregular seaway; and

.5 the information supplied to the master in accordance with paragraphs 7.1 and 7.2 of regulation 8, as developed for compliance with paragraphs 2.3 to 2.3.4 thereof, shall apply unchanged to ro-ro passenger ships approved according to these requirements.

2 For assessing the effect of the volume of the assumed accumulated seawater on the damaged ro-ro deck in paragraph 1, the following provisions shall prevail:

.1 a transverse or longitudinal bulkhead shall be considered intact if all parts of it lie inboard of vertical surfaces on both sides of the ship, which are situated at a distance from the shell plating equal to one-fifth of the breadth of the ship, as defined in regulation 2, and measured at right angles to the centreline at the level of the deepest subdivision load line;

.2 in cases where the ship's hull is structurally partly widened for compliance with the provisions of this regulation, the resulting increase of the value of one-fifth of the breadth of it is to be used throughout, but shall not govern the location of existing bulkhead penetrations, piping systems, etc., which were acceptable prior to the widening;

.3 the tightness of transverse or longitudinal bulkheads which are taken into account as effective to confine the assumed accumulated seawater in the compartment concerned on the damaged ro-ro deck shall be commensurate with the drainage system, and shall withstand hydrostatic pressure in accordance with the results of the damage calculation. Such bulkheads shall be at least 4 m in height;

.4 for special arrangements like hanging decks and wide side casings, other bulkhead heights may be accepted based on detailed model tests;

---

16 Refer to the Model test method, given in the appendix.

.5 in calculating the effect of the water on the damaged ro-ro deck, the volume and surface effect of the water shall be reduced by 10% to account for the permeability of the ro-ro space;

.6 the effect of the volume of the assumed accumulated seawater need not be taken into account for any compartment on the damaged ro-ro deck, provided that such a compartment has on each side of the deck freeing ports evenly distributed along the sides of the compartment complying with the following:

.6.1 $A \geq 0.3\,l$

where: A is the total area of freeing ports on each side of the deck in m^2; and

l is the length of the compartment in m;

.6.2 the ship shall maintain the residual freeboard of at least 1 m in the worst damage condition without taking into account the effect of the assumed volume of water on the damaged ro-ro deck;

.6.3 such freeing ports shall be located within the height of 0.6 m above the damaged ro-ro deck, and the lower edge of the ports shall be within 2 cm above the damaged ro-ro deck; and

.6.4 such freeing ports shall be fitted with closing devices or flaps to prevent water entering the ro-ro deck whilst allowing water, which may accumulate on the ro-ro deck, to drain; and

.7 when a bulkhead above the ro-ro deck is assumed damaged, both compartments bordering the bulkhead shall be assumed to be flooded but the distribution density of seawater in such compartment may be determined by the following formula:

$$d = d_0 \cdot A_1 / (A_1 + A_2)$$

where: d_0 is the distribution density when assuming the bulkhead is undamaged, as determined in accordance with paragraph 1 of these requirements;

A_1 is the area of the larger compartment in m^2; and

A_2 is the area of the smaller compartment in m^2.

3 For ships with centrecasings, any horizontal openings for passenger or vehicle access to the other side need not be closed and made watertight. The calculation of amount of water on deck should be made as if the centrecasing is watertight provided the opening is not greater than 5.5 m in width or the sum of all openings is not greater than 5.5 m in width. If the opening in the centrecasing is greater than 5.5 m in width then the calculation of amount of water on deck should be based upon the deck area on both sides of the centrecasing and with free flow of water between the two sides.

Appendix

MODEL TEST METHOD

1 Objectives

In the tests provided for in paragraph 1.4 of the stability requirements pertaining to the agreement, the ship should prove capability to withstand a seaway defined in paragraph 3 hereunder in the worst damage case scenario.

2 Ship model

2.1 The model should copy the actual ship for both outer configuration and internal arrangement - in particular of all damaged spaces, having an effect on the process of flooding and shipping of water. The damage should represent the worst damage case defined for compliance with paragraph 2.3.2 of SOLAS regulation II-1/8 (SOLAS 90). An additional test is required at a level keel midship damage, if the worst damage location according to SOLAS 90 is outside the range ± 10 % Lpp from the midship. This additional test is only required when the ro-ro spaces are assumed to be damaged.

2.2 The model should comply with the following:

.1 length between perpendiculars (Lpp)is to be at least 3 m;

.2 hull is to be thin enough in areas where this feature has influence on the results;

.3 characteristics of motion should be modelled properly to the actual ship, paying particular attention to scaling of radii of gyration in roll and pitch motions. Draught, trim, heel and centre of gravity should represent the worst damage case;

.4 main design features such as watertight bulkheads, air escapes etc., above and below the bulkhead deck that can result in asymmetric flooding should be modelled properly as far as practicable, to represent the real situation;

.5 the shape of the damage opening shall be as follows:

.5.1 rectangular side profile with a width according to SOLAS regulation II-1/8.4.1 and unlimited vertical extent;

.5.2 isosceles triangular profile in the horizontal plane with a height equal to B/5 according to SOLAS regulation II-1/8.4.2.

3 Procedure for experiments

3.1 The model should be subjected to a long-crested irregular seaway defined by the JONSWAP spectrum with a significant wave height Hs, defined in paragraph 1.3 of the stability requirements and having peak enhancement factor γ and peak period Tp as follows:

.1 $Tp = 4\sqrt{Hs}$ with $\gamma = 3.3$; and

.2 Tp equal to the roll resonant period for the damaged ship without water on deck at the specified loading condition but not higher than $6\sqrt{Hs}$ and with $\gamma = 1$.

3.2 The model should be free to drift and placed in beam seas (90° heading) with the damage hole facing the oncoming waves. The model should not be restrained in a manner to resist capsize. If the ship is upright in flooded condition, 1° of heel towards the damage should be given.

3.3 At least 5 (five) experiments for each peak period should be carried out. The test period for each run shall be of a duration such that a stationary state has been reached but should be run for not less than 30 min in full-scale time. A different wave realization train should be used for each test.

3.4 If none of the experiments result in final inclination towards the damage, the experiments should be repeated with 5 runs at each of the two specified wave conditions or, alternatively, the model should be given an additional 1° angle of heel towards the damage and the experiment repeated with 2 runs at each of the two specified wave conditions. The purpose of these additional experiments is to demonstrate, in the best possible way, survival capability against capsize in both directions.

3.5 The tests are to be carried out for the following damage cases:

.1 the worst damage case with regard to the area under the GZ curve according to SOLAS; and

.2 the worst midship damage case with regard to residual freeboard in the midship area if required by 2.1.

4 Survival criteria

4.1 The ship should be considered as surviving if a stationary state is reached for the successive test runs as required in 3.3 but subject to 4.2.

4.2 Angles of roll of more than 30° against the vertical axis, occurring more frequently than in 20% of the rolling cycles or steady heel greater than 20° should be taken as capsizing events even if a stationary state is reached.

5 Test approval

5.1 It is the responsibility of the Administration to approve the model test programme in advance. It should also be born in mind that lesser damages may provide a worst case scenario.

5.2 Test should be documented by means of a report and a video or other visual record containing all relevant information of the ship and test results. A copy of the video and report should be submitted to the Organization, together with the Administration's acceptance of the test.

ANNEX 4

INTERNATIONAL MARITIME ORGANIZATION

4 ALBERT EMBANKMENT,
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Ref.T2/6.05

IMO

COM/Circ.106
6 August 1991

TESTING OF MF DIGITAL SELECTIVE CALLING EQUIPMENT
INSTALLED FOR DISTRESS AND SAFETY BY SHIPS AND COAST STATIONS

1 The CCIR, recognizing the need for a means of testing the MF DSC system without either initiating a commercial call or generating a false alarm, have introduced a special "test" call, which enables a safety category message to be generated by a vessel and acknowledged by a coast station.

2 The Sub-Committee on Radiocommunications at its thirty-seventh session (COM 37/17 paragraphs 3.38 and 3.39):

recognizing that many ship installations may not have been used since they were commissioned and ship and coast station operators would benefit from experience of operating procedures,

bearing in mind the provision of regulation N3068 of the ITU Radio Regulations which prescribes that "test transmissions shall be kept to a minimum" and "should be co-ordinated with a competent authority, as necessary", in order not to overload the distress channel, and

recommended that adjacent Administrations introduce a regular daily exchange of MF DSC "test/safety" messages between their coast stations and that ships, periodically exchange MF DSC test messages with their nearest coast station either prior to entering harbour or prior to departure.

3 Administrations are further advised that the publication of a list of coast stations equipped with MF DSC equipment, stating which stations can accept and reply to DSC test calls, would be helpful to shipmasters.

ANNEX 5

TELECOMMUNICATIONS ADMINISTRATION CENTRE

INSTRUCTIONS FOR TESTING OF MF DSC EQUIPMENT

Ships may test their MF/HF DSC equipment:

a) By exchanging a test message on the distress and safety frequency 2187.5 kHz with a coast station provided with DSC. In Finland the MMSI number 002301234 should be called.

b) By generating a digital selective call on a "safe" frequency with no DSC alerting. This does not allow for full acknowledgement of whether the contents of the DSC message are correct.

c) By sending a routine message to a coast station, to another ship or to a nautical college using DSC, either on the international calling frequency or on a traffic frequency previously agreed upon.

d) By calling MRCC Turku, which is maintaining watch on Finland's national frequency pair and the first international frequency pair on 8 MHz.

The frequencies are:

Ship/transmission	MRCC Turku/transmission
2157.5 kHz	1622.5 kHz
8415.0 kHz	8436.5 kHz

Normal testing on these frequencies takes place as follows:

format	selective
MMSI	002300002
category	routine
telecom 1	ship position.

If the secondary aim is to test the transition to voice communication, the MRCC should be informed. Call (921) 281 5803 before starting.

The tests mentioned in paragraphs (a) to (d) are described in detail below. Annexed is a list of the MMSI numbers of Finnish ships and of certain European coast radio stations.

a) Testing on the distress and safety frequency

If the purpose of the test is to check the possibility of establishing contact with a coast station or a MRCC on the MF DSC distress and safety frequency 2187.5 kHz, the test should be carried out as follows:

Format specifier = individual call.

Address = the MMSI number of the MRCC or the coast station. Attached is a list of MMSI numbers to certain coast stations maintaining watch on 2187.5 kHz.

Category = safety message.

Own identity = MMSI number of own ship.

The DSC message shall contain an indication, as described by the manufacturer, that the call is a test ("first telecommand" = "test 118").

The MRCC or the coast radio station responds to the call by DSC. This is indicated on the ship's own DSC display. Normally communication is not continued.

In Finland the test can be conducted by calling Helsinki Radio, Turku Radio, MRCC Turku or the MRSCs (Helsinki, Vaasa).

b) Tests on "safe" frequencies

If the sole purpose of the test is to check whether a DSC call is transmitted or not, the test shall be made on a channel for radiotelex communications. Appropriate frequencies are:

2149.0 kHz
4204.5 kHz
6302.5 kHz
8398.5 kHz
12562.0 kHz
16787.0 kHz
18895.0 kHz
22354.0 kHz
25195.0 kHz.

The call shall be addressed to a specific station (MMSI number 230230230 may be used) and the category of the call shall be set to "routine". Such a call will not be acknowledged and no further communication takes place.

c) A routine call to a coast radio station or another ship

DSC routine calls may at any time be transmitted from ship to shore or from ship to ship.

For calls between a coast radio station and the ship, such DSC frequencies for routine messages are used as the coast station maintains watch on.

Ship-to-ship DSC routine calls may be transmitted on the HF telex frequencies assigned for ship-to-ship communications. Such HF frequencies are:

4204.5 kHz
6302.5 kHz
8398.5 kHz
12562.0 kHz
16787.0 kHz
18895.0 kHz
22354.0 kHz
25195.0 kHz.

For ship-to-ship DSC calls on MF frequencies, the international DSC frequency 2177.0 kHz may be used.

d) Calls to the MRCC Turku test station

The radio station of MRCC Turku will start maintaining watch on the Finnish national MF DSC frequency pair and three international HF DSC frequency pairs. The station is aimed for testing of shipborne DSC equipment.

The DSC frequencies used by MRCC Turku are:

Ship transmission frequency	MRCC transmission frequency
2157.5 kHz	1622.5 kHz
4208.0 kHz	4219.5 kHz
6312.5 kHz	6331.0 kHz
8415.0 kHz	8436.5 kHz.

The station's MMSI number is 002300002.

The station is automatically maintaining watch on the MF DSC frequency pair 2157.5/ 1622.5 kHz.
For use of other frequencies, prior agreement with the test station is needed.

MRCC Turku is equipped with an INMARSAT-B satellite terminal, which may be contacted by:

phone	871 - 323000020
fax	871 - 323000021
telex	581 - 323000023
data	1111 - 323000022 (9.6 KBIT).

ANNEX 6

INTERNATIONAL MARITIME ORGANIZATION

4 ALBERT EMBANKMENT
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COM/Circ.127
23 February 1995

Ref. T2/6.03

GUIDELINES FOR AVOIDING FALSE DISTRESS ALERTS

1 The Sub-Committee on Radiocommunications, at its fortieth session (16 to 20 January 1995), prepared a draft Assembly resolution on guidelines for avoiding false distress alerts, given at annex. The guidelines are expected to be approved by the sixty-fifth session of the Maritime Safety Committee and submitted for adoption by the nineteenth Assembly.

2 In view of the urgency of reducing the number of false distress alerts now occuring, as outlined in the draft Assembly resolution, the Sub-Committee approved circulation of the guidance pending its adoption by the Assembly and invited the Maritime Safety Committee to endorse this decision.

3 Governments are invited to bring the guidance to the attention of all concerned.

***

ANNEX

DRAFT ASSEMBLY RESOLUTION ON GUIDELINES FOR AVOIDING FALSE DISTRESS ALERTS

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization (IMO) concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

CONSIDERING problems reported by Member Governments related to the proper operation of the GMDSS, in particular that false distress alerts are becoming a major problem to the efficient operation of search and rescue (SAR) services,

RECALLING that the GMDSS was developed on the basis of resolution 6 to the International Conference on Maritime Search and Rescue, 1979 and that according to that resolution, the GMDSS should provide, among other things, the essential radio elements of the international SAR plan,

NOTING that the excessive amount of false distress alerts creates a serious and unnecessary burden on Rescue Co-ordination Centres (RCCs), may have adverse effects on seafarers' confidence in the GMDSS and could also have potentially serious effects on real distress situations and the safety of life at sea,

BEING AWARE that, if a substantive reduction in the number of false distress alerts now occurring is not achieved in the near future, the quality and efficiency of SAR organizations might be jeopardized,

CONSIDERING that an urgent dissemination of some of the problems which have become evident to rescue service providers would help in the education of people and organizations involved and eventually contribute to a reduction in the number of false distress alerts,

CONSIDERING ALSO that Administrations, manufacturers, educators, users, communication and rescue service providers and all others concerned need guidance on ways and means of reducing false distress alerts,

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee at its [sixty-fifth] session,

1. ADOPTS the Guidelines for Avoiding False Distress Alerts, set out in the annex to the present resolution;

2. URGES Governments to bring them to the attention of all concerned.

ANNEX

GUIDELINES FOR AVOIDING FALSE DISTRESS ALERTS

1 Administrations should:

.1 inform shipowners and seafarers about the implications of the rising number of false distress alerts;

.2 make important provisions for ships to properly register all GMDSS equipment, and ensure that this registration data is readily available to RCCs;

.3 consider establishing and using national violation enforcement measures to prosecute those who:

.3.1 inadvertently transmit a false distress alert without proper cancellation, or who fail to respond to a distress alert due to misuse or negligence;

.3.2 repeatedly transmit false distress alerts; and

.3.3 deliberately transmit false distress alerts;

.4 use the International Telecommunication Union violation reporting process for false distress alerts, or for failure to respond to a distress alert relayed from shore-to-ship;

.5 ensure that all relevant ship personnel know how GMDSS equipment operates, the importance of avoiding false distress alerts and the necessary steps to be taken to prevent transmitting false distress alerts and the procedures to be followed when a false distress alert has been transmitted;

.6 inform type-approval authorities of false distress alert problems to draw their attention to testing and alerting functions of radio equipment during the type approval process;

.7 urge companies installing radio equipment to train relevant ship personnel to ensure they are familiar with operation of the installed equipment;

.8 investigate the cause when a specific model of GMDSS equipment repeatedly transmits unwanted distress alerts and inform appropriate organizations accordingly;

.9 ensure that surveyors and inspectors are informed about GMDSS equipment, and particularly how to operate and test it without transmitting a false distress alert; and

.10 require that GMDSS radio operators be appropriately certificated.

2 Manufacturers, suppliers and installers should:

.1 design equipment for distress alerting so that:

.1.1 it will not be possible to transmit a distress alert unintentionally;

.1.2 the panel for emergency operation is separated from the one for normal operation and is partially fitted with a cover and the switches on the panel are clearly classified by colouring; and

.1.3 there are standardized arrangements of operation panels and operational procedures;

.2 design test features so that the testing of GMDSS equipment will not result in transmitting false distress alerts;

.3 ensure that any distress alert activation is indicated visually or acoustically, or both and shows that the equipment is transmitting a distress alert, until manually deactivated;

.4 ensure that the satellite EPIRB position on board, installations (including the release and activation mechanisms) and handling procedures preclude unwanted activation (designing the EPIRB so that when it is out of its bracket it must also be immersed in water to activate automatically. When operated manually a two-step activation action is required);

.5 provide clear and precise operational instructions that are easy to understand (maintenance and operational instructions should be separated, and should be delivered in English and any other language deemed necessary);

.6 ensure that when any GMDSS equipment has been installed, necessary instructions are given to appropriate ship personnel, specifically pointing out the operational procedures (a record should be kept that such instructions have been given); and

.7 ensure that supplier and installation personnel understand how the GMDSS works, and the consequences of transmitting a false distress alert.

3 Trainers and educators should:

.1 ensure that maritime education centres are informed and teach about false distress alert problems and implications to SAR, the GMDSS, etc., and the procedures to be followed if a false distress alert is transmitted;

.2 obtain and use actual case histories as examples when teaching;

.3 emphasise the need to avoid false distress alerts in all maritime training and education; and

.4 ensure that no inadvertant transmission of a false distress alert occurs when training on GMDSS equipment.

4 Companies, Masters and seafarers should, as appropriate:

.1 ensure that all GMDSS certificated personnel responsible for sending a distress alert have been instructed and are competent to operate the particular radio equipment on the ship;

.2 ensure that the person or persons responsible for communications during distress incidents give necessary instructions and information to all crew members who should know how to use GMDSS equipment to send a distress alert;

.3 ensure that during each abandon ship drill instruction is given on how emergency equipment should be used to provide GMDSS functions;

.4 ensure that GMDSS equipment testing is only undertaken under supervision of the person responsible for communications during distress incidents;

.5 ensure that GMDSS equipment testing or drills are never allowed to cause false distress alerts;

.6 ensure that encoded identities of satellite EPIRBs, which are used by SAR personnel responding to emergencies, are properly registered in a database accessible 24 hours per day or automatically provided to SAR authorities (masters should confirm that their EPIRBs have been registered with such a database to help SAR services identify the ship in the event of distress and rapidly obtain other information to help them respond appropriately);

.7 ensure that EPIRB, INMARSAT and DSC registration data is immediately updated, if the ship's owner, name, flag or similar information changes, and, necessary action is taken to reprogramme the ships new data in the GMDSS equipment concerned;

.8 ensure that, for new ships, positions for installing EPIRBs are considered at the earliest stage of ship design and construction;

.9 ensure that satellite EPIRBs are carefully installed in accordance with manufacturers' instructions and using qualified personnel (sometimes satellite EPIRBs are damaged or broken due to improper handling or installation. They must be installed in a proper location to float-free and automatically activate if the ship sinks. Care must be taken that they are not tampered with or accidentally activated. If the coding must be changed or the batteries serviced, manufacturers' requirements must be strictly followed. There have been cases of attaching EPIRB lanyards to the ship so the EPIRB cannot float free; the lanyards are only to be used by survivors for securing the EPIRB to a survival craft or person in water.);

.10 ensure that EPIRBs are not activated if assistance is already immediately available (EPIRBs are intended to call for assistance if the ship is unable to obtain help by other means, and to provide position information and homing signals for SAR units);

.11 ensure that if a distress alert has been accidentally transmitted, the ship makes every reasonable attempt to communicate with the RCC by any means to cancel the false distress alert using the procedures given in the appendix;

.12 ensure that, if possible, after emergency use, the EPIRB is retrieved and deactivated; and

.13 ensure that when an EPIRB is damaged and needs to be disposed of, or if a ship is sold for scrap or for any other reason a satellite EPIRB will no longer be used, the satellite EPIRB is made inoperable by either removing its battery and if possible returning it to the manufacturer or by demolishing it.

Note: If the EPIRB is returned to the manufacturer it should be wrapped in tin foil to prevent transmission of signals during shipment.

Appendix

INSTRUCTIONS FOR MARINERS AND OTHERS**
FOR CANCELLING A FALSE DISTRESS ALERT

DSC

1 **VHF**

.1 switch off transmitter immediately*

.2 switch equipment on and set to Channel 16

.3 make broadcast to "All Stations" giving name of vessel, callsign and DSC number, and cancel the false distress alert.

Example

All Stations, All Stations, All Stations
This is NAME, CALLSIGN,
DSC NUMBER, POSITION.

Cancel my distress alert of
DATE, TIME, UTC.
= Master, NAME, CALLSIGN,
DSC NUMBER, DATE, TIME UTC.

2 **MF**

.1 switch off equipment immediately*

.2 switch equipment on and tune for radiotelephony transmission on 2,182 kHz

make broadcast to "All Stations" giving the vessel's name, callsign and DSC number, and cancel the false distress alert.

* This applies when the false alert if detected during transmission.

** Appropriate signals should preceed these messages in accordance with the ITU Radio Regulations chapter NIX.

Example

All Stations, All Stations, All Stations
This is NAME, CALLSIGN,
DSC NUMBER, POSITION.

Cancel my distress alert of
DATE, TIME. UTC.
= Master NAME. CALLSIGN.
DSC NUMBER. DATE. TIME UTC.

3 **HF**

As for MF but the alert must be cancelled on all the frequency bands on which it was transmitted. Hence, in stage 2.2 the transmitter should be tuned consecutively to the radiotelephony distress frequencies in the 4, 6, 8, 12 and 16 MHz bands, as necessary.

INMARSAT-C

4 Notify the appropriate RCC to cancel the alert by sending a distress priority message via the same CES through which the false distress alert was sent.

Example of message

NAME, CALLSIGN, IDENTITY NUMBER,
POSITION,
Cancel my INMARSAT-C distress
alert of DATE, TIME, UTC
= Master +

EPIRBs

5 If, for any reason, an EPIRB is activated accidentally, the ship should contact the nearest coast station or an appropriate coast earth station or RCC and cancel the distress alert.

General

6 Notwithstanding the above, a ship may use any means available to them to inform the appropriate authorities that a false distress alert has been transmitted and should be cancelled.

7 No action will normally be taken against any ship or mariner for reporting and cancelling a false distress alert. However, in view of the serious consequences of false alerts, and the strict ban on their transmission, Governments may prosecute in cases of repeated violations.

ANNEX 7

List of MMSI numbers of certain coast radio stations maintaining watch on 2187.5 kHz

Finland	MRCC Turku	
	MRSC Helsinki	00 230 1234
	MRSC Vaasa	
	Turku Radio	00 230 0020
	Helsinki Radio	
Denmark	Lyngby Radio	00 219 1000
	Blaavand Radio	00 219 2000
Sweden	Göteborg Radio	00 265 1000
	Stockholm Radio	00 265 2000
Norway	Tjöme Radio	00 257 0100
	Farsund Radio	00 257 0200
	Rogaland Radio	00 257 0300
	Bergen Radio	00 257 0400
	Florö Radio	00 257 0500
	Orlandet Radio	00 257 0600
	Bodö Radio	00 257 0700
Germany	Norddeich Radio	00 211 4200
	Rügen Radio	00 211 4500
Belgium	Oostende Radio	00 205 0480
Holland	Netherlands Coast Guard	00 244 2000
Great Britain	Falmouth MRCC	00 232 0014
	Milford Haven MRSC	00 232 0017
	Holyhead MRSC	00 232 0018
	Clyde MRSC	00 232 0022
	Stornoway MRSC	00 232 0024
	Shetland MRSC	00 232 0001
	Aberdeen MRCC	00 232 0004
	Tyne/Tees MRSC	00 232 0006
	Humber MRSC	00 232 0007
Ireland	Malin Head Radio	00 250 0100
	Valentia Radio	00 250 0200

ANNEX 8

MMSI numbers of Finnish ships 18.6.1996
(The list contains ships which have been allocated MMSI numbers although they are not provided with DSC equipment.)

MMSI number	Name of ship	Call sign	Telex
230101000	Tebo Olympia	OINM	
230102000	Outokumpu	OITG	
230103660	Fanny	OIEM	
230103670	Mariana	OF-2576	
230104000	Kontula	OIKF	14115
230105710	Kiisla	OIUL	
230105740	Lokki	OGOU	
230105750	Kurki	OIUZ	
230105760	Kajava	OIUJ	
230105770	Kihu	OIUK	
230105850	Tiira	OIUH	
230105870	RV 137	OGOM	
230105880	RV 142	OGOV	
230105890	RV 126	OGNX	
230105910	RV 125	OGNW	
230105940	RV 136	OGOL	
230105950	RV 135	OGOK	
230105960	RV 123	OGNU	
230105970	RV 124	OGNV	
230105980	RV 133	OGOI	
230105990	PV 124	OIUV	
230106000	Oihonna	OISE	14122
230106040	PV 114	OIUN	
230106060	PV 117	OI-7998	
230106070	PV 108	OIUB	
230106080	PV 121	OIUU	
230106090	PV 112	OIUF	
230106110	PV 104	OGOX	
230106140	PV 119	OI-8000	
230106150	PV 120	OIUR	
230106160	IA 101	OJED	
230106180	RV 243	OGOW	
230106190	RV 241	OGOQ	
230106210	RV 238	OGON	
230106250	RV 214	OGNL	
230106260	RV 222	OGNT	
230106270	RV 220	OGNR	
230106280	RV 221	OGNS	
230106290	RV 213	OGNK	
230106310	RV 215	OGNM	
230106340	PV 217	OIUO	
230106350	PV 209	OIUC	
230106360	PV 211	OIUE	
230106370	PV 210	OIUD	
230106380	PV 205	OGOY	
230106390	PV 225	OIUX	

MMSI number	Name of ship	Call sign	Telex
230106410	PV 218	OIUS	
230106440	PV 222	OIUW	
230106460	PV 220	OI-7974	
230106470	PV 216	OI-7972	
230106480	PV 214	OI-7975	
230106490	PV 212	OJEA	
230106550	AV 244	OI-7981	
230106570	RV-301	OGOC	
230106580	PV-313	OIUG	
230106590	RV-340	OGOP	
230106610	PV-315	OIUP	
230106640	RV-332	OGOH	
230106650	PV-303	OGOT	
230106660	RV-331	OGOG	
230106670	RV-330	OGOF	
230106680	PV-323	OIUY	
230106690	PV-321	OI-7966	
230106750	RV-334	OGOJ	
230106760	PV-319	OIUT	
230106780	PV-316	OIUQ	
230106810	PV-306	OGOZ	
230106840	RV-339	OGOO	
230106850	PV-307	OIUA	
230106860	IA 303	OI-9324	
230106870	IA 304	OI-9323	
230107000	Envik	OIQS	
230107340	Tiina V	OI-4073	
230107660	Mio	OI-5270	
230107680	Wanda	OI-7019	
230107770	Katrilli	OI-3319	
230107910	Marita	OI-8348	
230108000	Kemira	OINR	14057
230108010	RV 216	OGNN	
230108040	AV 218	OI-7976	
230108060	AV-210	OI-9189	
230108070	AV-211	OI-9190	
230108080	AV-212	OI-9192	
230108090	AV 216	OI-7982	
230108160	Sea-Gull I	OI-8736	
230108270	Valborg	OFNR	
230108280	Otto Malm	OI-9405	
230108290	Tuulie	OF-8135	
230108340	Heavy-Lady	OI-6806	
230109000	Finnsailor	OIVK	14134
230110000	Antares	OIWI	
230111000	Sirri	OINS	
230112000	Arkadia	OIQD	14113
230113000	Silja Festival	OISZ	14133
230114000	Palva	OITS	14093
230115000	Tervi	OITR	14090
230116000	Kihu	OISL	14125
230117000	Tavi	OISM	14127

MMSI number	Name of ship	Call sign	Telex
230118000	Lunni	OIHM	14095
230119000	Sotka	OIHN	14096
230121000	Tiira	OIHO	14097
230122000	Uikku	OIHQ	14098
230124000	Melkki	OIQU	14112
230126000	Vikla	OIOE	14075
230132000	Kristina Regina	OGBF	
230133000	Finnfellow	OIBS	
230134000	Degerö	OISX	
230135000	Svanö	OIPJ	
230136000	Borden	OIIE	
230137000	Turku Hill	OITN	14138
230139000	Mesto	OIEI	14086, 14130
230141000	Gunilla	OGXX	
230142000	Finnmerchant	OIPZ	14087
230143000	Norden	OIGN	14034
230145000	Aranda	OIRY	
230148000	Bore Britannica	OIZE	14140
230149000	Camilla	OIPP	
230150000	Fennia	OGRJ	
230151000	Alandia	OIJJ	
230157000	Norqueen	OIKQ	14060 (ex Bore Queen)
230158000	Cinderella	OIZS	
230159000	Isabella	OIZD	
230161000	Najaden	OIZB	
230162000	Winden	OIZC	
230163000	Trenden	OIZF	
230164000	Linda	OIXT	
230165000	Sofia	OIZK	
230166000	Aila	OIZL	
230167000	Finnjet	OIHH	14036
230169000	Norking	OIKP	14059 (ex Bore King)
230172000	Amorella	OIWS	
230176000	Roslagen	OIAP	
230178000	Aulis	OIOH	
230180000	Rosella	OIKR	
230181000	Mariella	OITI	14128
230182000	Kari	OIOG	
230183000	Astrea	OJCU	
230184000	Silja Serenade	OJCS	
230185000	Mimer	OIZX	(ex Bore Star)
230186000	Bore Sea	OIZZ	
230188000	Bore Nordia	OIZY	
230189000	Hamnö	OJCW	
230190000	Birka Princess	OITY	
230191000	Link Star	OIXX	
230192000	Merikotka	OJFL	14149
230193000	Finnfighter	OJGY	
230194000	Hesperia	OJCZ	
230196000	Katarina	OHLV	
230197000	Kristina Brahe	OIEC	
230201000	Herakles	OGTC	

MMSI number	Name of ship	Call sign	Telex
230202000	Steel	OIVR	
230203000	Casandra	OITK	
230204000	Granö	OJDA	
230205000	Miniforest	OIKC	
230206000	Bona Fe	OIIT	
230207000	Marika	OIKD	
230208000	Smaragden	OJDB	
230209000	Passaden	OJDC	
230210000	Klenoden	OJDD	
230211000	Christina	OJDK	
230212000	Tankos	OITW	
230213000	Ann-Mari	OJCQ	
230215000	Radisson Diamond	OJDO	14148
230216000	Mini Star	OIXW	
230217000	Ahtela	OJDL	
230218000	Mastera	OJDR	14146
230219000	Petsamo	OIZH	
230220000	Jenolin	OJDU	
230221000	Julia	OJDV	
230223000	Wasa Queen	OJDZ	
230225000	Helena	OJDX	
230226000	Styrsö	OJDM	
230227000	Lagard	OIWT	
230228000	Hermes	OIHB	
230229000	Dox	OIXV	
230232000	Raahen Fiia	OI-2708	
230234000	Telepaatti	OF-3100	
230236000	Westgard	OINB	
230237000	Majgard	OING	
230238000	Anette	OISP	
230242000	Futura	OJDJ	
230245000	Fennica	OJAD	14153
230246000	Natura	OJDY	14154
230247000	Finnmaster	OJFH	
230248000	Finnhansa	OJFG	14156
230249000	Silja Europa	OJFN	
230251000	Kontio	OIRV	14136
230252000	Otso	OIRT	14132
230255000	Marnav	OGPF	14085
230258000	Pooki	OIHP	14137
230259000	Lillgaard	OIWU	
230262000	Garden	OIIF	14162
230263000	Tower Julie	OJCY	
230268000	AT Marine	OIYE	14163
230269000	Doris	OJDS	
230270000	Helen	OJFP	
230272000	Sydgard	OJFX	
230274000	Mega	OIEV	
230275000	Nordica	OJAE	14170
230276000	Kraft	OIHG	
230277000	Linden	OJFU	
230279000	Neptun	OIKS	

MMSI number	Name of ship	Call sign	Telex
230281000	Protector	OGPT	
230282000	Porin Karhu	OIHF	
230283000	Fram	OITV	
230284000	Finnmaid	OJFZ	
230285000	Bore Song	OJGA	14173
230286000	Esko	OIOI	
230289000	Sisu	OHMW	14038
230290000	Urho	OHMS	14022
230291000	Voima	OHLW	14051
230293000	Railship I	OJGC	14174
230296000	Jakobstads Wapen	OJGG	
230298000	Muikku	OHMM	
230300000	Valpas	OGOD	
230301000	Turva	OGOE	
230302000	Merikarhu	OJEG	
230303000	Tursas	OIUI	
230304000	Uisko	OIUM	
230305000	Finnpine	OJGM	
230306000	Finnpartner	OJGE	
230307000	Fjordstein	OJGL	
230308000	Östgard	OJGH	
230310000	AES	OJGJ	
230313000	Hanse	OHMN	
230315000	Bravaden	OJGQ	
230316000	Ajax	OF-2525	
230318000	Aura 3	OGWE	
230319000	Pohjanmaa	OIMD	
230321000	Anne	OJGS	
230322000	Apollo	OJGU	
230323000	Hocus Pocus	OJGV	
230324000	Tradewind	OJFW	
230325000	Vekara	OITM	
230327000	Ossi Barck	OIPO	
230328000	Raju	OIQH	
230329000	Finntrader	OJGF	
230331000	Kaipaa	OGXC	
230336000	Pasila	OJGT	
230339000	Zeus	OJHB	
230341000	Fjärdvägen	OJHC	
230344000	Transgard	OJHE	14181

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HELSINKI 1996